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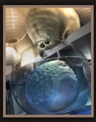
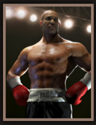
3dcreative

Issue 046 June 2009

ARTICLES
Tenth of a Century



INTERVIEWS
Till Nowak & **Viktor Fretyan**



GALLERIES
Sven Juhlin, **Jeff Miller** & **Jose Alves da Silva,** plus more!

man meets beast

'Manimal' creation is our brand new tutorial series where we focus on the creation of half-human-half-animal monstrosities. So join **Bruno Melo** as he shows us how he created **Bird-Man** - also this month's cover feature!

THE MINOTAUR
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IMAGE BREAKDOWN
In keeping with our Manimal theme, we round off this beastly edition with making of articles by **David Moratilla Amago** & **Sean Langford**

EDITORIAL

Welcome to ISSUE 46 – just 2 issues away from our third birthday, can you believe? This issue has a running theme of hybrid creatures born of the cross between man and beast. You'll find these beasties scattered through the magazine in all shapes, forms and sizes. We have a Bird-Man (this month's cover feature) tutorial created by the very talented artist, **Bruno Melo** (P.65); we see two artists speed sculpt their way to creating Minotaur characters in the Speed Sculpting section of the magazine (P.53); we find a fantastic making of article on the production of the charismatic *Poker Master* by **David Moratilla Amago** (P.77), and as if that's not enough mutant goodness for you then you'll find more animal behaviour in The Gallery, where **Jonathan Simard** brings us his latest character, *Jennifer*, and **Jose Alves da Silva** brings us a bunny with attitude in his image, *Le Rabbit* (P.39). So lots of monstrous activity this month, so much so in fact that you'll be inspired to create your own beastly beauty in no time. So let's get stuck in!

Our interviews this month kick off with **Till Nowak** – digital artist, designer and filmmaker all in one handsome package! This artist is a one man army, running his own studio, producing creative work for clients – all this on top of his own independent projects. Enough to make any man or woman feel dizzy at the thought! So we catch up with Till this month to find out about his life as an artist in Germany, what he's up to and what his plans for the future are (P.7). Then head on over to our second artist interview for June with the man behind the stunning architectural renders that frequent the CG community: **Viktor Fretyan** (P.17). Viktor's portfolio is quite simply stunning, and this interview shows just a tiny slice of what he has under his belt. Whether indoor or outdoor, come spring, summer, autumn or winter, Viktor has nailed the scene and captured it with the clarity and precision that most can only dream of. So check out this interview for a peek into the world of a visualisation artist.

We wave goodbye this month to the Gothic Church tutorial project as we finish up things by working our render passes in Photoshop (P.97). Our post-production artist, **Zoltan Korcsok**, has had his work cut out for him this month: he has composited not one, but 5 Gothic Church scenes for you all, so that you can follow the series on from where you left off last month in 3ds Max, Maya, LightWave, Cinema 4D and modo. And if that wets your appetite for post-production then you'll be coming back for more next month as we kick off a brand new series on Photoshop for 3D, featuring Zoltan Korcsok in part one of six. Talking of new tutorials, we welcome a new series to 3DCreative this month in the form of 'Manimal' sculpting and texturing in ZBrush (this series will also utilise 3ds Max in places). We've invited **Bruno Melo** to kick start this tutorial series for us, and he'll be back later on in the series as well with another interpretation of one of our freakish subjects. Next month **Jesse Sandifer** will be tackling a Mammal-Man, and other artists for this series include **Rafael Grassetti**, **Federico Scarbini**, and **Tomasz Kwiecinski**. Tomasz is in fact also a featured artist in this month's issue in the Speed Sculpting section, alongside 3DCreative regular artist **Sean Langford** (P.53), so be sure to check that out. For more from Sean, hop on over to his making of article based on his 3D image tribute to Cam de Leon's 'Fishboys' concept (P.85).

Well, as always, I could talk the hind legs of a donkey – crossed with a man of course – when it comes to summing up the content in any one issue of 3DCreative, so I'll stop wittering on and let you get inspired and creative. Enjoy this month's issue! ED.

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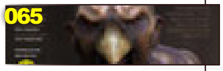

EDITOR
Lynette Clee

LEAD DESIGNER
Chris Perrins

LAYOUT
Layla Khani
Matt Lewis

MARKETING
Lacey Philips

CONTENT
Lynette Clee
Tom Greenway
Richard Tilbury
Chris Perrins

PROOFING
Jo Hargreaves

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Get the most out of your Magazine!

If you're having problems viewing the double-page spreads that we feature in this magazine, follow this handy little guide on how to set up your PDF reader!

Setting up your PDF reader

For optimum viewing of the magazine, it is recommended that you have the latest Acrobat Reader installed. You can download it for free, here: DOWNLOAD!

To view the many double-page spreads featured in 3DCreative magazine, you can set the reader to display 'two-up', which will show double-page spreads as one large landscape image:

1. **Open the magazine in Reader;**
2. **Go to the** VIEW **menu, then** PAGE DISPLAY;
3. **Select** TWO-UP CONTINUOUS, **making sure that** SHOW COVER PAGE **is also selected.**

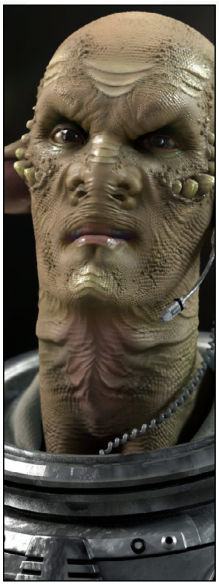
That's it!

CONTRIBUTING ARTISTS

Every month many artists from around the world contribute to 3DCreative magazine. Here you can read all about them. If you would like to be a part of 3DCreative or 2DArtist magazines, please contact: lynette@3dtotal.com

Gothic Church
Interior Creation

As this tutorial series comes to and end, our regular artists step aside and hand over to Zoltan Korcsok, who will guide us through the post-production stage of this series and wrap up the Gothic Church Interior project for 3d Studio Max, Cinema 4D, LightWave, Maya, and modo.



ZOLTAN KORCSOK

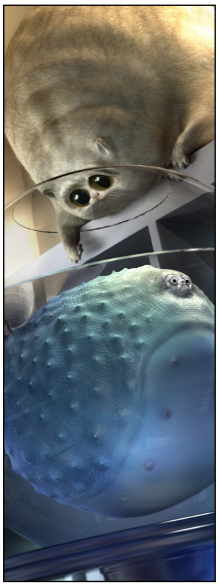
Graduated from the Moholy-Nagy University of Art and Design as a designer in visual communication arts (MA). He's currently a freelance 3D artist, illustrator and book designer, who's been working in the games industry since the 90s. He's a modo beta tester with experience using a variety of 3D software: ZBrush, Cinema 4D, Maya and Silo. http://www.zkorcsok.hu

trurl10@gmail.com

VIKTOR FRETYAN

Is currently what he calls a "so-called architect"; he does architectural renders, mainly. His basic tool is 3ds Max which he's been working with for many years. Besides this, over the past few years he's become more and more fond of the post-processing part of visualisation. His inspiration comes from the relationship between volumes, space, light and shadow. http://radicjoe.cgsociety.org/gallery

radicjoe@yahoo.com



TILL NOWAK

A digital artist, designer and filmmaker based in Hamburg, Germany. He is working in his own computer animation studio for creative agencies, film productions and documentaries, as well as independent and experimental projects. His work has won numerous awards in film festivals all over the world.

http://www.framebox.com

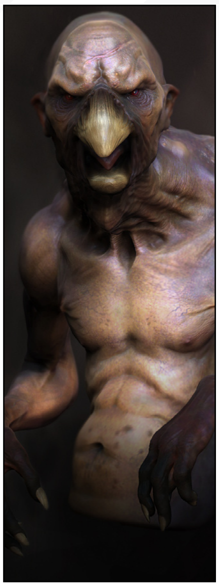
tn@framebox.de

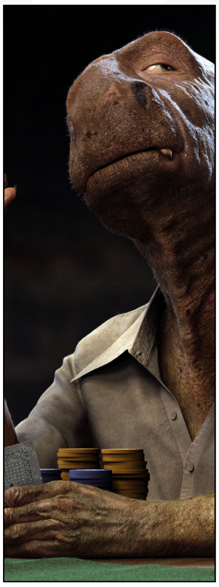
image by Viktor Fretyan

BRUNO MELO

A 24-year old character artist living in Sao Paulo, in Brazil, who is currently working freelance for feature films and games. He has been fascinated with game and film art since a child, and he started studying CG and traditional art about 5 years ago. He's always hoping to have the chance to participate in big projects that will help him to grow as an artist. http://bmelo.cgsociety.org/

bmmsouza@gmail.com





DAVID MORATILLA AMAGO

Started as a modeller/texturing artist in 1998. Now he is working full-time as lead 3D artist in a simulation company in Madrid. In his spare time he also works freelance (covering all 3D areas) or on personal projects (from still renders to 3D shorts, animations, games). He always tries to give all his work the best quality that he can.

http://dmoratilla.cgsociety.org/gallery

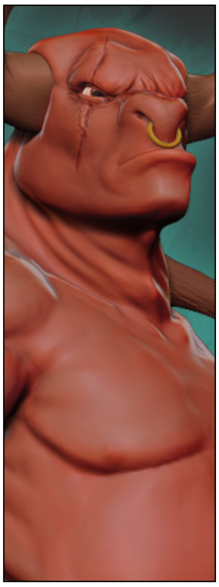
dmoratilla@gmail.com

SEAN LANGFORD

25-year old lead artist. In the last four years at Green Grass Studios he's worked on everything from modelling, animation and concept art, to art direction and compositing – all whilst working on VFX for TV and commercials, and game cinematics. His passion is character creation and he spends his free time working on various creatures.

http://www.seanlangford.blogspot.com

slangford@GreenGrassStudios.com



TOMASZ KWIECINSKI

Freelance 3D modeller in Poland, who started playing with 3D around 10 years ago with 3d Studio Max 2.5. He has always been interested in organic modelling and creating characters, and about a year ago he discovered ZBrush and immediately got addicted. Although he still uses 3d Studio Max today, he can't imagine organic modelling without ZBrush!

mafida@neostrada.pl

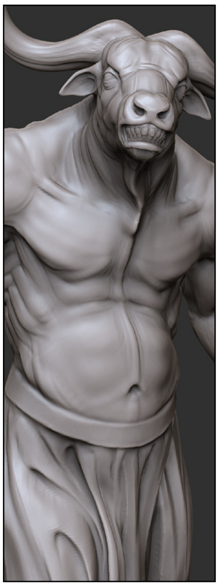


Image by Jose Alves da Silva

NEW ORLEANS:
ULTRA-ANALOG
SIGGRAPH 2009:
MEGA-DIGITAL

TILL NOWAK

> "The most important project for me was definitely "Delivery", because it brought me a lot of attention and totally changed my creative focus. When the film was just finished I never expected how much it would change my life by bringing the independent side of creativity in front of the commercial one"

Till Nowak is a digital artist, designer and filmmaker based in Hamburg, Germany. He runs his own, one-man computer animation studio, producing work for creative agencies, film productions, documentaries alongside his own independent and experimental works.

TILL NOWAK

Hi Till, it's great to have the opportunity to interview you! Now do you think it's possible to sum up your accomplished career history in a few lines for our readers?

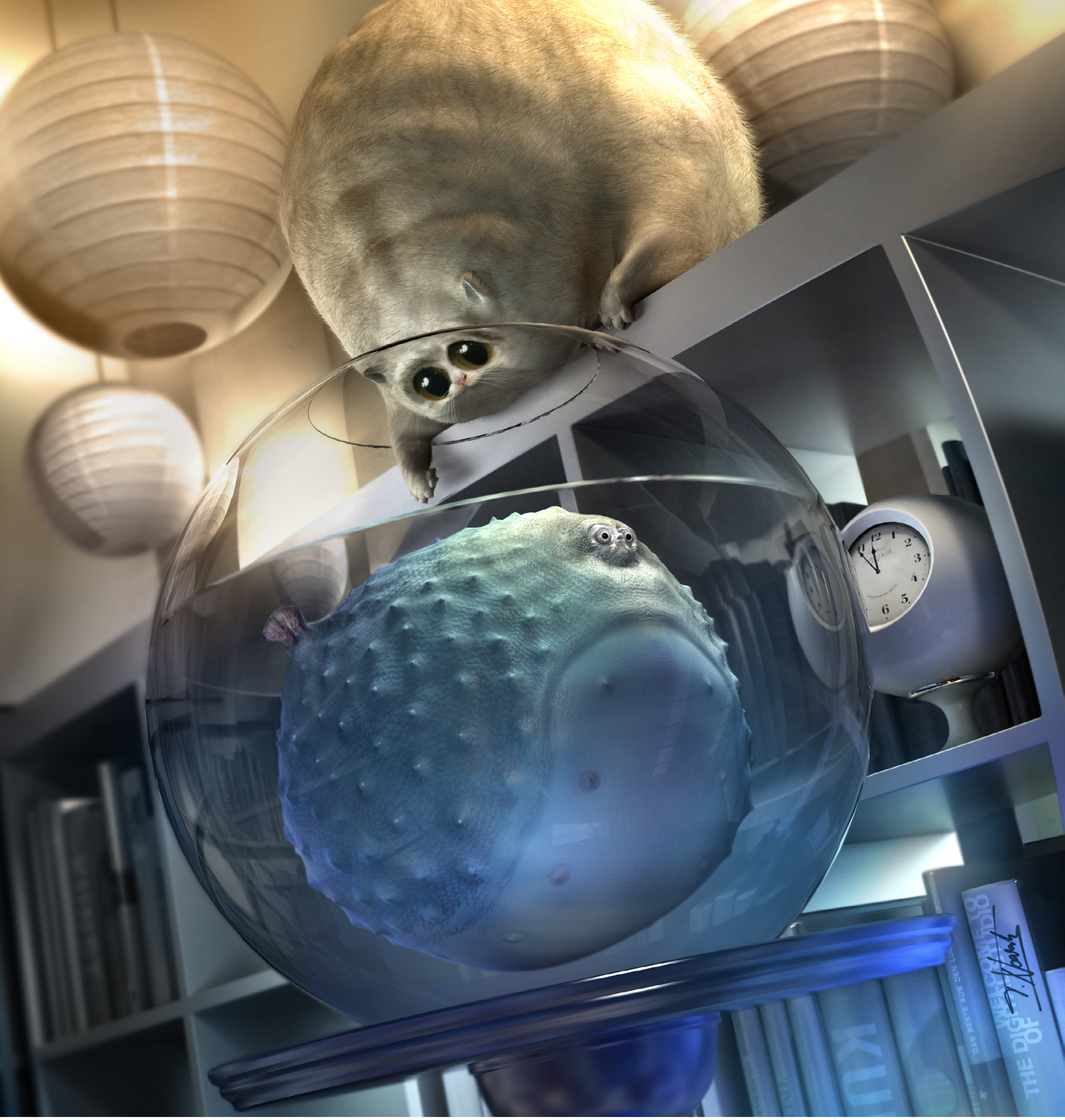
Through my parents I was always surrounded by art and creativity as a child, but I was the only one in the family who became interested in computer graphics in the early 1990's. I got my first professional animation job for TV when I was 19, for which I founded my little animation studio "frameboX". I worked mainly for classic design agencies and advertising until the success of my animated short film *Delivery* in 2005 which changed my focus from the advertising world to independent art and cinema. *Delivery* won around 35 awards, for example at the AFI Fest in Hollywood or in Annecy, which opened the doors for exciting contacts and working relationships like Aardman studios or HR Giger. I am now working as a mini-production company, because I love my freedom and independence. I create independent artworks, light installations, concept art, classic design and illustration work, as well as animation for TV and cinema.

That sounds like quite a variety. What projects are you working on right now?

I recently finished my first music video for the German pop group Ben*Jammin. The video is based on shaky hand camera footage enhanced with visual effects. The band meets a mysterious urban guru who teaches them how to let the whole world jump. I directed it and created the basic concept and visual effects. You can find a preview teaser from the video on **www.framebox.com** and it will be screened at SIGGRAPH in New Orleans this summer. The official video release is planned to happen in July.

With a project like this are you in charge of the live action and directing too, even the concepts? Or do you concentrate on the CG only?

During the three days of shooting this video



> "WHEN SIMULATED DIGITAL PARTICLES ARE AFFECTED BY FORCES AND DEFLECTORS THEY DEVELOP A LIFE OF THEIR OWN, BECOME A LIVING MASS"

I had a great team of helpers, especially the cinematographers Ivan Robles Mendoza and Michael Kuhlmann who perfectly created the handheld camera feeling I wanted. Besides that, yes, I did all the jobs you mentioned and also developed the initial concept. For this project it was good to be director and CG department in one person because I knew exactly how the effect would work and how it had to be shot, and obviously there were no discussions between the director and the effects people! Generally, the degree of responsibility in my projects differs. Usually I am working as a designer and CG professional for other directors instead of directing myself, but this could change some day in the future.

Looking at your projects would it be fair to say you have an interest in the dynamics side of 3D? What are the pro and cons of using heavy dynamics in projects?

I love working with particles, in abstract works as well as photorealistic effects. When simulated digital particles are affected by forces and deflectors they develop a life of their own, become a living mass – in an artistic sense - and so they become an easy and efficient tool to get rid off the digital cleanliness. This is the

visual aspect I love about particles, but generally I avoid all kinds of heavy simulation in my work, because my motivation is so dependent on fast results. I don't do anything I have to wait for, like fluids or hair. I also don't like baked simulations; in fact almost all my effects are still controllable in real time because I need this direct access or I get nervous. So I avoid getting stuck in the technical side of using dynamics and keep the artistic control and instant feedback.

That sounds like a great way to work with 3D while keeping it as artistic and spontaneous as possible. What methods do you use/avoid to enable this real-time working method?

In many cases the solution is very primitive: by just avoiding them, which means that I am simply not available for heavy fluid or hair work.

These kind of works usually consist of too much technical VFX, which means less artistic control for me. But besides avoiding it, here is an example of my technical approach to something like this: the Begerow logo animation [**Click here to download the movie**]. It shows some liquid interacting with the surrounding obstacles. Here I used simple deformed cylinders which are covered and revealed in certain areas and made round and wobbly by using some modifiers. So while it still looks like fluid, there is no simulation here. Another example is the shaved hair on the floor besides the bumblebee (http://www.framebox.de/creations/3d/bumblebee/index.htm) which is just groups of cylinders copied, rotated and placed on the floor instead of growing or simulating it. Or the destruction of a pre-sliced glass wall (http://www.framebox.de/creations/3d/arrow/index.htm) with a so called “mesh bomb” space warp in 3ds Max, which works in real-time.

Photo: Till Nowak’s Studio Location

One project listed on your website (**http://www.framebox.com/**) really caught my eye because it’s just so different from what we normally see on artist’s sites and that is the light installation “EDGES4” (**http://vimeo.com/2552864**) created for the Berlin Fashion show. Can you tell us a little about how this project was realized and how the amazing effects were achieved?

After I had already done three other installations, I was invited to do this projection and stage design by the lingerie fashion label Trés Bonjour. Frank and Vio also provided the fantastic team that made the whole thing possible by building and organizing everything. I created projections for two separate video projectors, all synchronized to a 15 minute soundtrack by ZERB. So the whole experience was over after 15 minutes, which is quite different from my other installations which ran over 5 days. The topic of the show was “deep sea geishas” so I worked with particle flow to create bubbles and an underwater feeling. The particles and other animated graphics were interacting with the structure of the room, for example the bubbles bounced back from the real-world wall-mounts. The reaction between projection and the underlying geometry of the

real world is the basic concept of all my video installations, which you can find on **www.edges.framebox.com**. Artistically it is the transformation of my projection mapping based CG workflows into the real world where it erases the borders between reality and virtuality, which is related to what my life as a CG artist feels like.

The final effect is really quite incredible. What sort of feedback do you get from the live viewers for these installations?

The reactions are usually positive, sometimes enthusiastic. Many people would like me to create such an installation for their companies, homes or offices, but at this point the high effort compared to the short lifetime of it becomes an obstacle. Strong projectors are expensive, the projections have to be adjusted carefully at the start of each cycle and the projections are only visible in darkness, so these installations are always a temporary and volatile experience.

With so many high profile 3D projects under your belt, when you think back which ones really stand out for you and why?

The most important project for me was definitely *Delivery*, because it brought me a lot of attention and totally changed my creative focus. When the film was just finished I never expected how much it would change my life by bringing the independent side of creativity in front of the commercial one. Another important project for me is “Salad”, which brought me an incredible amount of feedback and made me become a personal friend of HR Giger and Leslie Barany, or “Dishes”, because it’s one of these simple ideas I am always looking for.

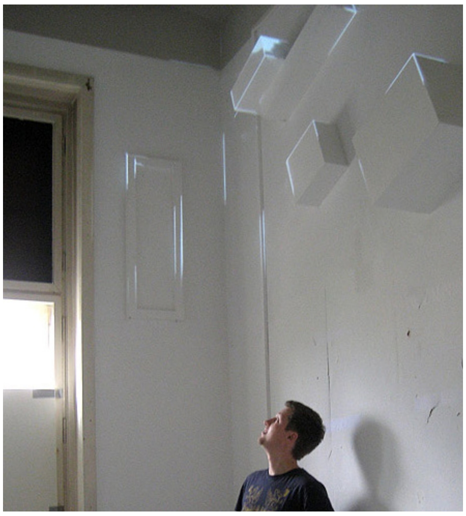
It sounds like your company is progressing very well with the expansion to your new studio in Hamburg. How did this move change things for you and are you thinking of expanding further?

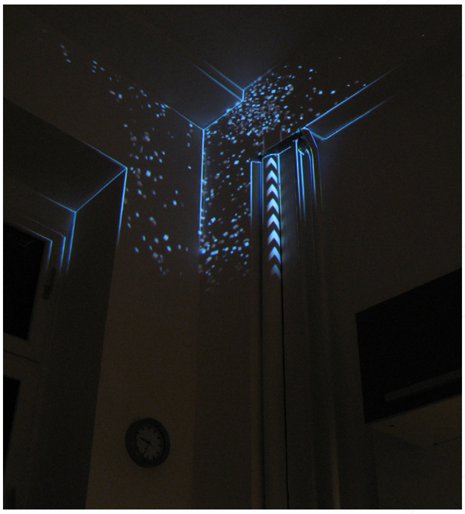
I passionately remain a one-man company, by which I mean that I don’t have a permanent, contracted, working relationship with anybody. Of course that does not mean that I am alone;

I always have other creative people around me and share a nice office space with five other artists. The difficulty of my one-man company structure is the limited capacity. This forces me to choose my projects very carefully. I am often asked why I don't expand my business and hire other artists to be able to accept more requests and bigger projects, but there is nothing I appreciate more than my freedom and my relaxed working environment. I don't want to become a manager, I want to do the stuff myself and I want to be able to decide every month what to do next. I am afraid that I would tend more towards commercial work instead of all my independent artistic projects if I start to employ a team. This means that I am rejecting the usual way of expansion in the sense of maximising profit. Maybe at some point in the future I will feel like it's time for employing people, that's definitely possible.

A lot of upcoming CG artists dream of making it on their own as freelancers. What do you think are the two most important pieces of advice you can pass on from your experiences?

To keep things simple and to finish pieces. Actually both of these are the same thing - many talented people have great ideas, but find it difficult to finish projects because they get stuck with technical problems and so they never publish things. But publishing is important in order to get feedback, to learn from it and to move forward. To bring your works to a presentable state and then get them into online forums, film festivals, etc. can kick-start a career and be a lot of fun too. But an early and important component in this chain is working efficiently, which for me means treating technology as a tool and not as the art itself. Therefore I have very little interested in geek talking about the speed of my computer or how many thousand plugins or scripts exist; I only want to hear about them in the moment that I need them for something specific, to keep it as simple and time-efficient as possible.





Sounds like great advice Till! Thanks again for chatting with us - we look forward to seeing what you come up with next!

TILL NOWAK

For more work by this artist please visit:
http://www.framebox.com/
Or contact them at:
tn@framebox.de
Interviewed by: Tom Greenway

> "I AM FOND OF ARCHITECTURE! I LOVE THE RELATIONSHIPS BETWEEN VOLUMES AND PLAYING WITH LIGHT AND SHADOW. I HAVEN'T EVER REALLY TRIED MY HAND AT OTHER GENRES AND I AM NOT PLANNING ON DOING SO."

3D artist Viktor Fretyán takes some time out of his busy working schedule to answer a series of questions about his life in the world of 3D and, in particular, his architectural render work.

Viktor Fretyán

Viktor Fretyan

Hi Viktor, can you tell us a little bit about yourself and how you initially became interested in the world of CG?

Hi there! I'm Viktor Fretyán. I'm an architect (or at least I will be in a year) and I work as a visualization artist. How did I become interested in 3D in the first place? Well I remember the very first time I met the program 3D Studio (and thus the 3D world itself). It was an average afternoon in elementary school. Some of us went around to a friend's house and he showed us some kind of a demo version of a program where he could put down different objects and light them up. It was really mesmerizing, although back in those days all I could do was make a box, put the label PANASONIC on it and say "It's a walkman!" And then year's later mental ray appeared first with GI and BANG! From then on 3D was not just an interesting hobby. It became the centre of my interest.

Wow so really it was only by chance that you first found out about the world of 3D and yet now, like you say, it's the centre of your interest! Before beginning to work in CG did you have any interest or talent in more traditional art - art away from a monitor - and do you feel it is necessary to be good at, say, drawing or painting to be able to work in CG?

I did show some talent in drawing from the very beginning. I won a couple of art contests at grammar school in Budapest and then I studied art in high school. After that somehow it was a straight line leading me to the architectural faculty at university. Sooner or later I'm pretty sure that I would have come across 3D anyway. It's just the way of the future. I am happy that I'm getting paid now for something I would be normally doing as a hobby. Unfortunately somewhere along the way I lost the interest (well not the interest, more like the time) for

hobbies like drawing and filming, which used to be my passion. I like to watch the ones I made once in a while; I feel sorry that I don't have the time for them anymore.

Your image "Couch by the Window" is to be included in 3DTotal's latest edition of *Digital Art Masters*. Could you tell us about its creation and in particular the lighting methods used?

For me that image means a lot! It was a kind of a breaking point in my work. Before that I did renders that qualified as arch viz only. A nice kitchen, living room or an exterior of a building ... all rendered, but with no real value. Then this render came along that had no special effects. It wasn't interesting because of the rendering technique, it was interesting because of the powerful composition. I like to believe that this image will be worth looking at years from now. The lightning supports this theory as well: there are only two light sources. There is one VRay plane at the windows to provide the main ambient light and another one on the right of the image. There is no sunlight present here as I thought it would distract the viewer. After producing this point, I felt that my work had changed (evolved, developed) and so I started focusing on this new way of working instead of trying to figure out more technical achievements. I think a good example of this new technique is my newest work, "Tadao Ando - Row House".

> I AM FOND OF ARCHITECTURE! I LOVE THE RELATIONS OF VOLUMES TO EACH OTHER AND PLAYING WITH LIGHT AND SHADOW.

Your portfolio is largely focused around architecture and interior design. What is it about these subjects that interests you so much and have you considered exploring different genres?

I am fond of architecture! I love the relationships

between volumes and playing with light and shadow. I haven't ever really tried my hand at other genres and I am not planning on doing so. I am only interested in architectural renders. I rarely ever click on any other threads.

Do you have any interesting up and coming projects that you can share with the readers of 3DCreative?

I am working for a company that buys and refurbishes valuable landmark buildings.

As a 3D artist, it's a very interesting project! These buildings are beautiful and with the new refurbishment, the traditional old style mixes with the new design and materials. My first big project for this company was the Exchange Palace in Budapest. Never before have I worked on a huge project like this. I had to model the whole building from the outside and all its main rooms.

The first image I have shown from this project is called "In Waiting..." which is my own interpretation of the original hall, but there are more other interesting topics from this building that I am planning to make soon!

This really does sounds like a great project to be working on! What are the time constraints for its completion?

The first big deadline was just a few weeks ago. It was one of the hardest few weeks of the whole project. I registered more than 80 hours

work per week, for about 3-4 weeks in a row. But it was a success: my renders were shown on the news on TV and in all the newspapers so I was really proud of myself.

I've had a little time to take a breath over the last few weeks, but now I've been moved to another project and I'm just so busy again that I can't really say when I'll have the time to work on any of the personal stuff that's in my mind.

Being based in Budapest you must gain inspiration from your surroundings. What is Budapest like as a city and also as a place of work?

First of all I want to say for the record that I love Budapest. This is my hometown and no matter where I go there can be no other place I could love this much. But I also have to say it is a place with many issues. Traffic is always stuck, streets are rusted and the people are not very friendly. When I think of Budapest, I think of a city that has so much potential that it could be

one of the nicest city in the world. It is divided into two parts by the Danube; the bridges are beautiful; the mountain grows out of the city it just next to the river, with the statue of liberty and the royal palace on top of it and all the buildings are at least 100 years old! But on the other hand Budapest fails to use its advantages. The houses are all black and grey because of the smog and it's always so busy that people can't really enjoy the sights. But I can assure that if you come here for a day or two you will have a really good time! Especially if you know someone from the city to take you around all the cool places.

> ONE OF MY PROFESSORS AT UNIVERSITY USED TO TELL ME "GOOD ENOUGH IS NOT GOOD NOR ENOUGH

As for work, I think it's a great place! Especially for freelancing jobs for foreign companies. I usually do that because the money they pay me it's much less than what they would have to pay for the same work in their home country and it is good for me because it's like 150-200% more than what I would get for the same job in Hungary.

Working in such a competitive industry must be very hard at times. What piece of advice would you give to anyone trying to get into the CG industry?

Well what can I say other than be good at what you do? Right now I don't have to look for work. I can choose the projects I want like to work on and, more importantly, choose the people I want to work with! It hasn't always been like this of course. In fact I have friends working in 3D who are struggling to make a living because they just don't get that many offers. Today it's not enough to just know the programs! You have to do more than that! One of my professors at university used to tell me "good enough is not good nor enough" and if I think of my work I find this saying very true. I constantly find myself sitting in front of the monitor at four in the morning still working on an image that could have been finished and handed in hours ago! And why? Because I can't just stand up until I know that it is at a stage where it can't get any better.

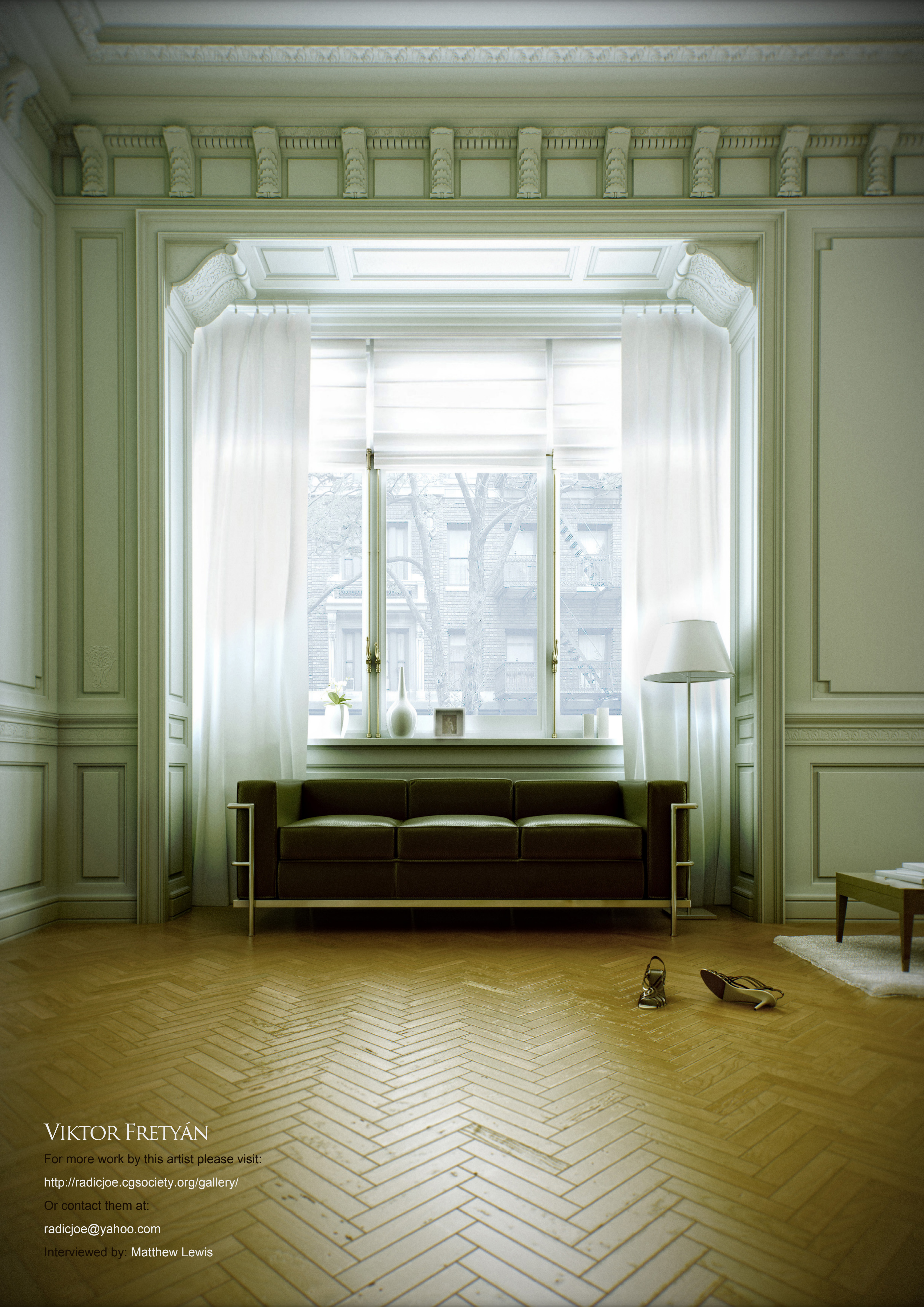
You clearly work very hard at what you do and the quality of your work speaks for itself. I'm sure you must have high ambitions; what would you like to be doing within the industry in five years time?

I'm sure I will try out other areas of the industry, like film or commercials, at some point. That is the really good thing about 3D: it can connect all kinds of interesting stuff! I love that! But right now I'm also sure I will stick with architectural visualization in the end, for two main reasons. The first one is pretty obvious: it's architecture of course. The other is that because I've become so used to rendering only still images, I feel I've been left behind by other aspects of 3D such as animating, which would be mandatory in the film industry. In five years I see myself abroad working at a company like Neoscape, Purerender or Vyonyx.

When you're not working what do you like to spend your time doing?

My hobby is CG too! When I have a day off I'm so happy that I can open 3ds Max and Photoshop only to try and make all the ideas come alive in my head. It is very rare and I usually only have one day off every 2-3 weeks since I'm working 12-15 hours, 7 days a week, so when it comes to this I only have a short time to accomplish what I want. "Couch by the Window", "Tadao Ando - Row House" and "House at the Beach" were all made in one day. And if I'm not doing this well I try to be with my family as much as I can.

Thanks for your time, Viktor, and also for giving the readers of 3DCreative a glimpse into your working life in the world of CG!



Viktor Fretyán

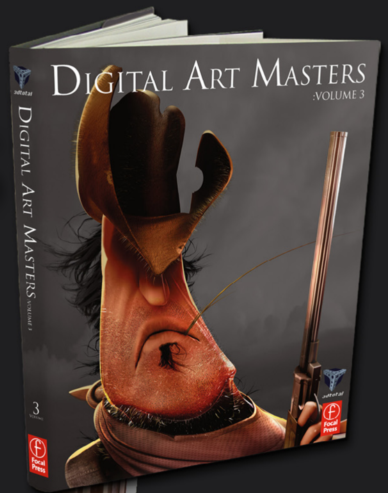
For more work by this artist please visit:

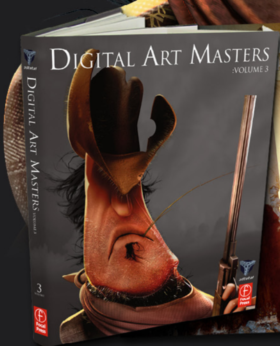
http://radicjoe.cgsociety.org/gallery/

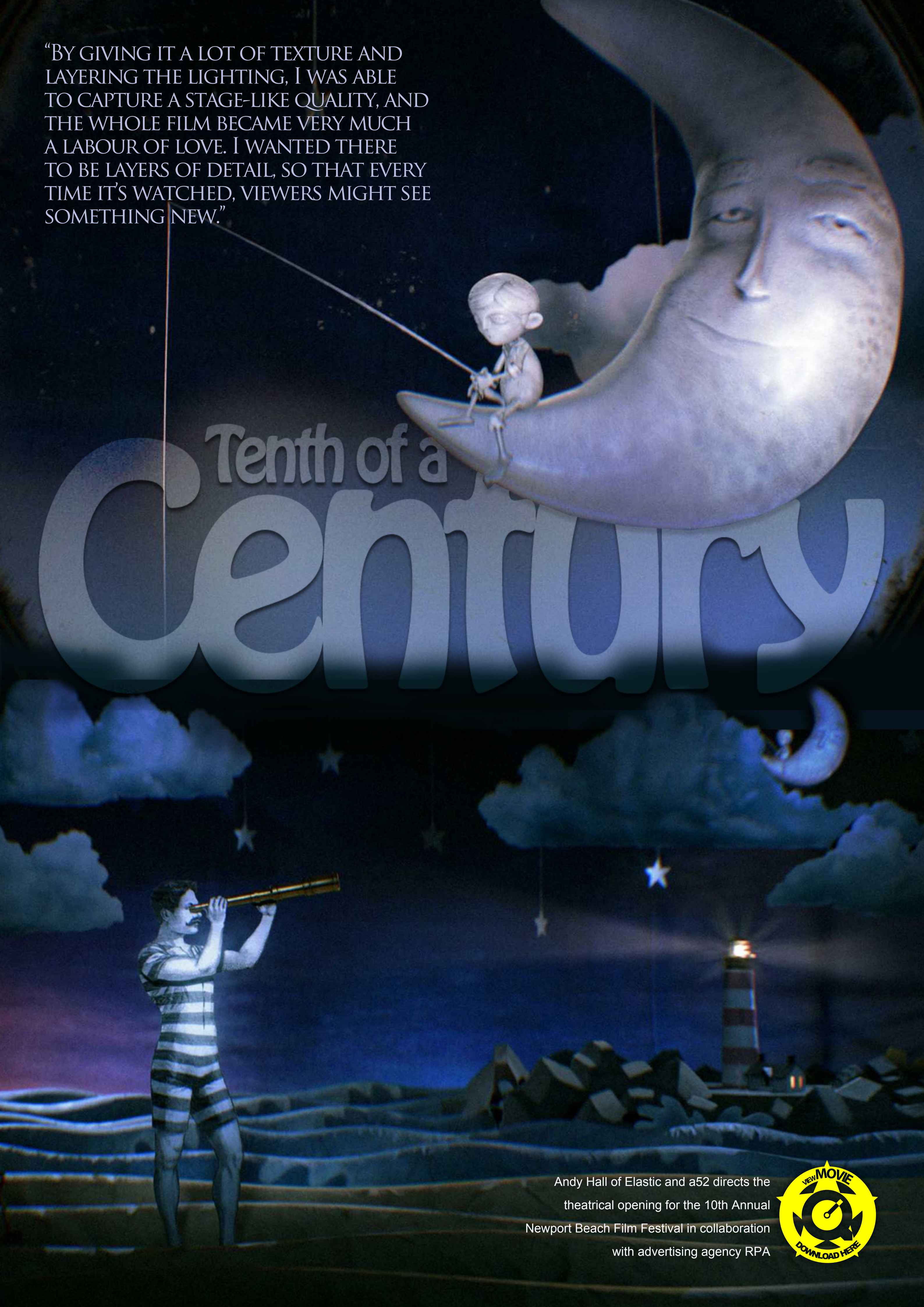
Or contact them at:

radicjoe@yahoo.com

Interviewed by: Matthew Lewis







“By giving it a lot of texture and layering the lighting, I was able to capture a stage-like quality, and the whole film became very much a labour of love. I wanted there to be layers of detail, so that every time it’s watched, viewers might see something new.”

Tenth of a Century

Andy Hall of Elastic and a52 directs the theatrical opening for the 10th Annual Newport Beach Film Festival in collaboration with advertising agency RPA

Tenth of a Century

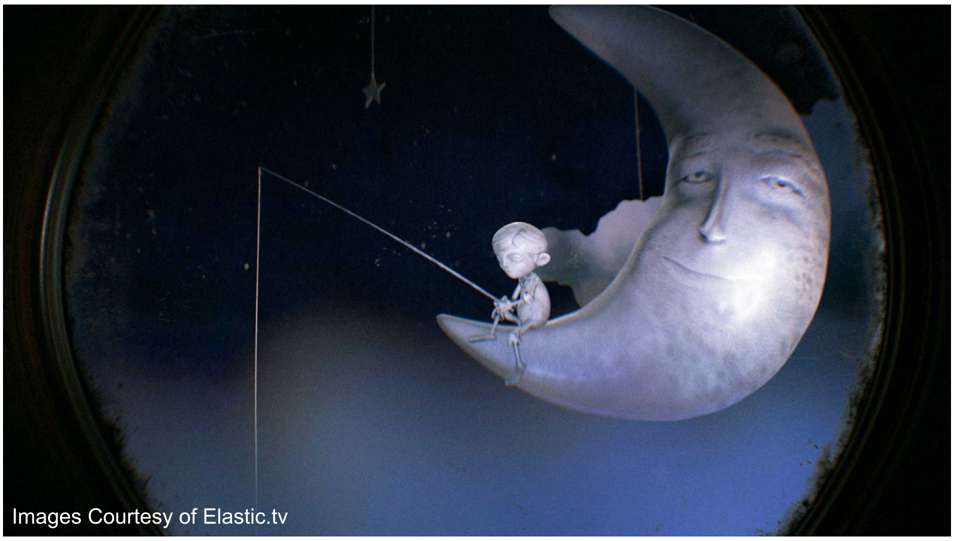
Images Courtesy of Elastic.tv

Images Courtesy of Elastic.tv

Full-service design company Elastic (**http://www.elastic.tv**) is very proud to detail the work of Andy Hall, 3D and visual effects supervisor at VFX boutique a52 (**http://www.a52.com**), for the 2009 Newport Beach Film Festival. Working through Elastic and in collaboration with advertising agency RPA's creative director Scott McDonald and SVP/executive producer Gary Paticoff, Hall directed the festival's official :30 opening, which introduced all fare screened at the 8-day event.

The fully computer-animated opening was designed by Hall to look and feel like one of the epic stop-motion masterpieces of Terry Gilliam or Tim Burton. The content artfully presents a take-off of the strangely similar aesthetic of studio titles – like Hollywood with a dramatic twist – that welcomes viewers to Newport Beach and their 10th annual celebration of film with wit and charm.

"Andy Hall is a mix of pure enthusiasm and sheer talent," began Scott McDonald, creative director at RPA. "Our client understood and supported what we were trying to do and believed in the artistry of the project. Elastic, Andy and a52 contributed such a sharp point of view - the very first ingredient was world class – we just kept throwing gasoline on that fire. I got to see this piece play on the biggest movie screen this side of the Mississippi and, let me tell you, it dropped some jaws."


Images Courtesy of Elastic.tv

"Being as this is the festival's 10th anniversary, the initial idea was a celebration of fanfare to the studios," Hall explained. "With that in mind, I wanted to create a narrative that took us on a journey connecting all these pieces. After much thought, it felt right to give the work a sense of style that tipped its hat to those opening fanfares – but in a whimsical way ... and getting back to my roots in animation, I really wanted to create a unique vision that would make the opening something special in its own right."

Working closely with a52's CG team, Hall achieved his desired style by focusing on the staging of the various shots in the sequence, while adding countless details and textures to ensure that each world feels like a hand-crafted set, while the separate elements fit into the action-filled narrative like clockwork.

"I was heavily influenced by the work of Terry Gilliam, particularly *The Adventures of Baron Munchausen* because of its theatrical nature," Hall added. "By giving it a lot of texture and layering the lighting, I was able to capture a stage-like quality, and the whole film became very much a labour of love. I wanted there to be layers of detail, so that every time it's watched, viewers might see something new."

Images Courtesy of Elastic.tv

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The end-frame of Hall's open, showing an iconic 3D sand sculpture forming the words, "10th of a Century: Newport Beach Film Festival," is the image featured on the festival's poster, program and print advertising.

The finished content was flawlessly colour-graded for film and HD/SD broadcast presentation by a52's Patrick Murphy using Autodesk Flame, and is driven by an original orchestral score from Robot Repair. Elastic's credits include executive producer Alex Gorodetzki, and for a52, executive producer Linda Carlson, producer Jenny Bright, CG supervisors Kirk Shintani and Max Ulichney, and 3D artists Adam Newman, Paulo de Almada and Christopher Janney. The spot's final mix is courtesy of Santa Monica's Framework Sound.

Images Courtesy of Elastic.tv

Finally, Hall also confirmed that Autodesk Maya 2009 formed the vital component of the project's production. "Especially with the new feature sets like the animation layers, it allowed for even great flexibility to create this imagery exactly the way I imagined it ... if not better."

ABOUT ELASTIC

Elastic is a full-service design studio launched in Santa Monica in 2008 by the founders of editorial company Rock Paper Scissors and visual effects company a52. For more information, please call Alex Gorodetzki at +1.310.586.0680, or visit **http://www.elastic.tv**.

Images Courtesy of Elastic.tv

ABOUT A52

Established in 1997 as a home for the very latest high-end photo-real visual effects technologies and the industry's most innovative and talented graphic design artists, visual effects boutique a52 creates award-winning imagery for the world's most visually ambitious commercial and television projects. Having relocated to Santa Monica in 2007, the company's work has earned AICP Show recognition for eleven consecutive years, along with recent "Outstanding Commercial" Emmy, Andy, BDA, Belding, Clio, British Design and Art Direction, International Monitor, International Automotive Advertising, London International Advertising, One Show and PROMAX awards. For more information, please call 310.586.0650 or visit **http://www.a52.com**.

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BRITT MCCOLL

PR Manager, RPA
+1.310.633.6485
bmccoll@rpa.com

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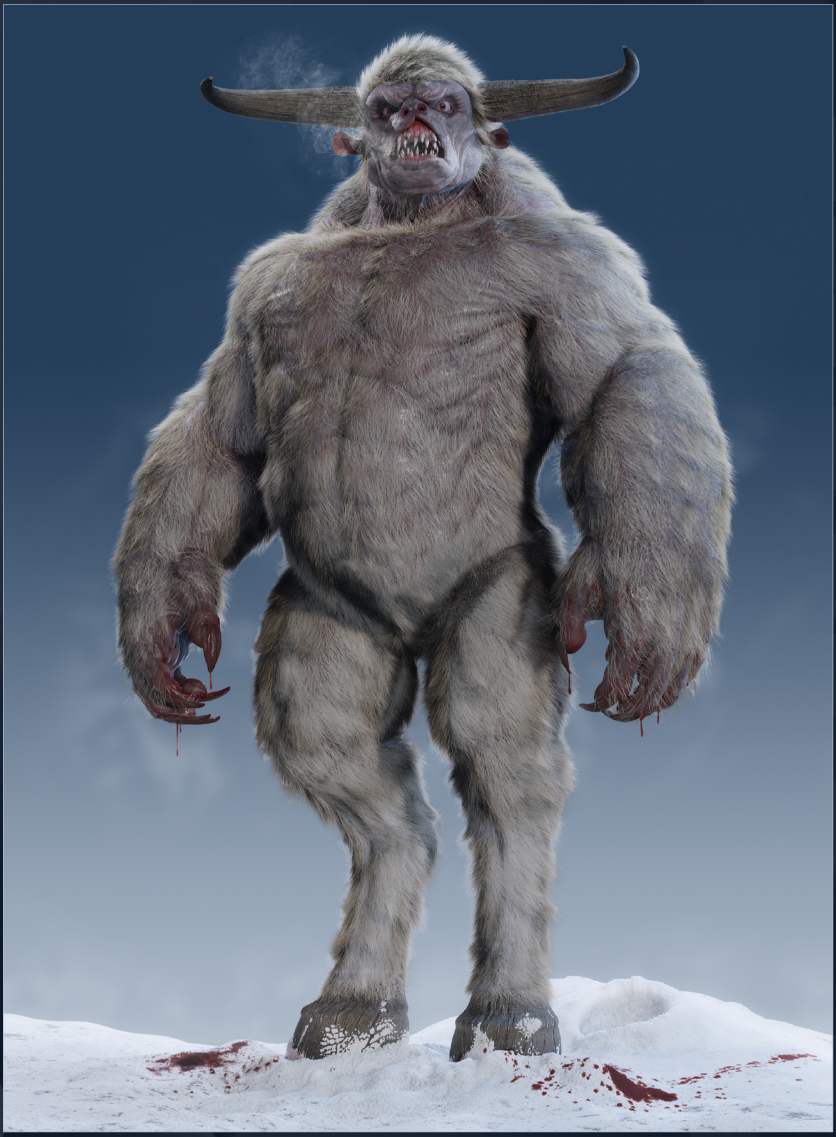
YETI

Sven Juhlin

http://www.daybreakcg.com

sven@daybreakcg.com



LIVING GREEN

Nightreelf

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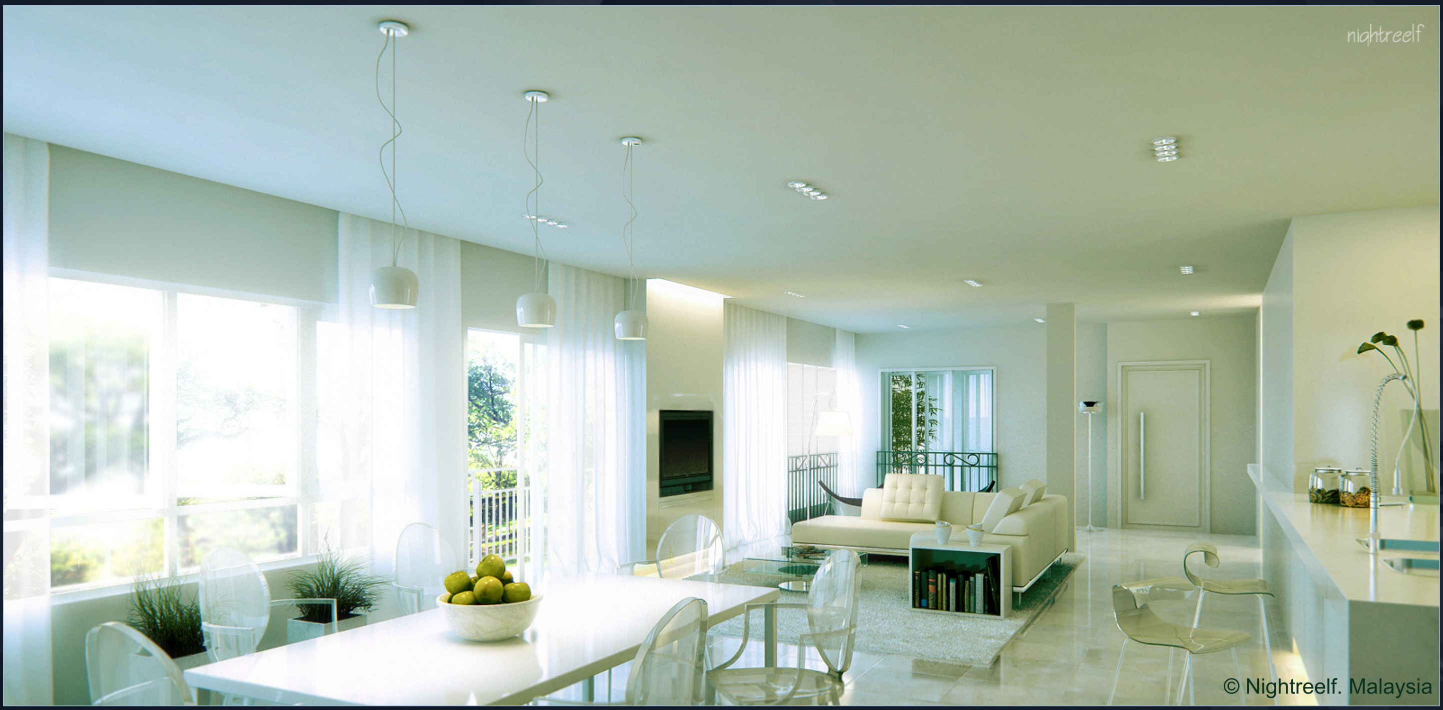

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THE BOXER: VICTORIOUS & DEFEATED

Jeff Miller
http://www.thenewred.com
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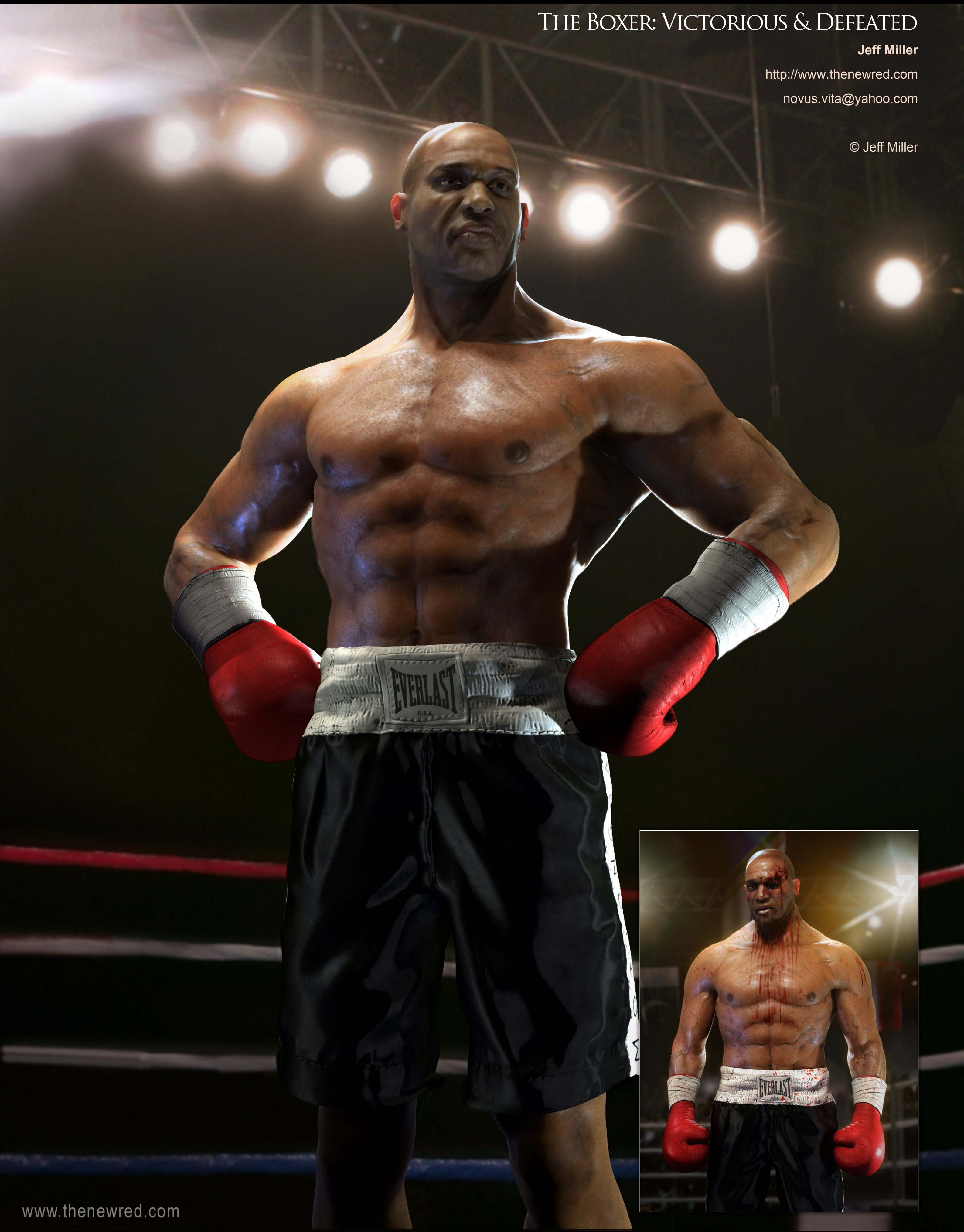
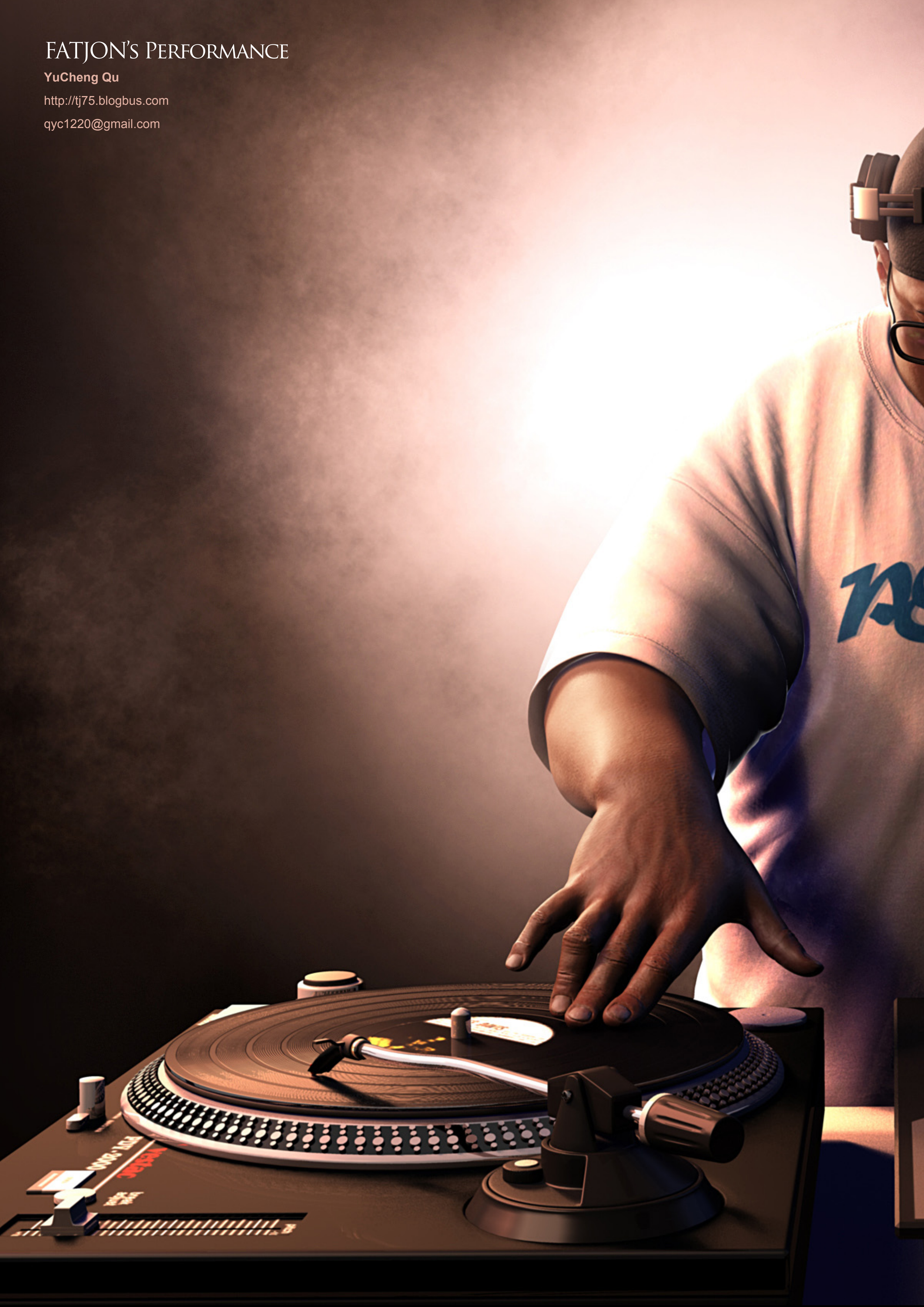


FATJON's PERFORMANCE

YuCheng Qu
http://tj75.blogbus.com
qyc1220@gmail.com



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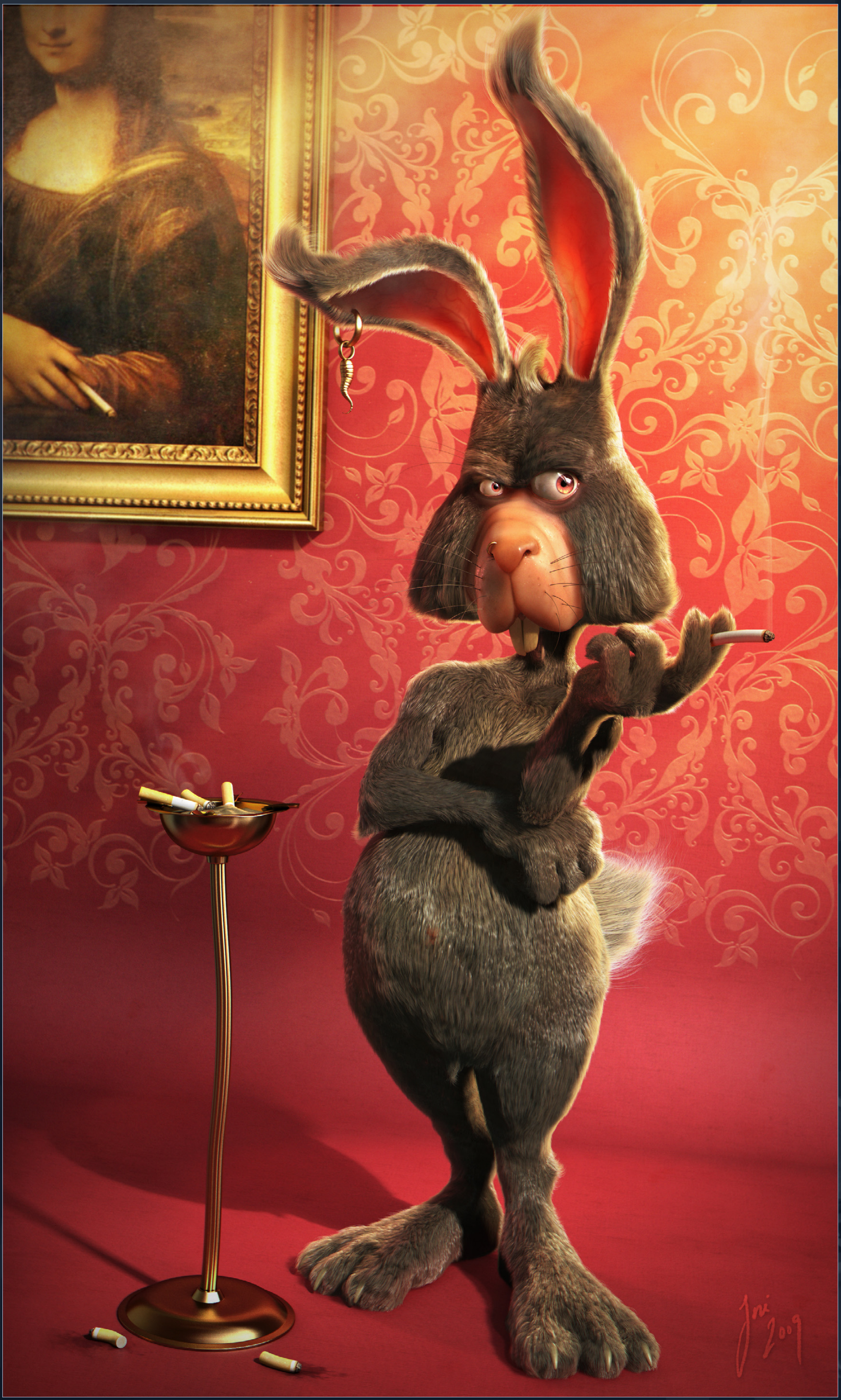

JENNIFER

Jonathan Simard
http://joofdeath.com/
capitaine_star@hotmail.com

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THE DUET

Balázs Pápay

http://www.bgx.hu

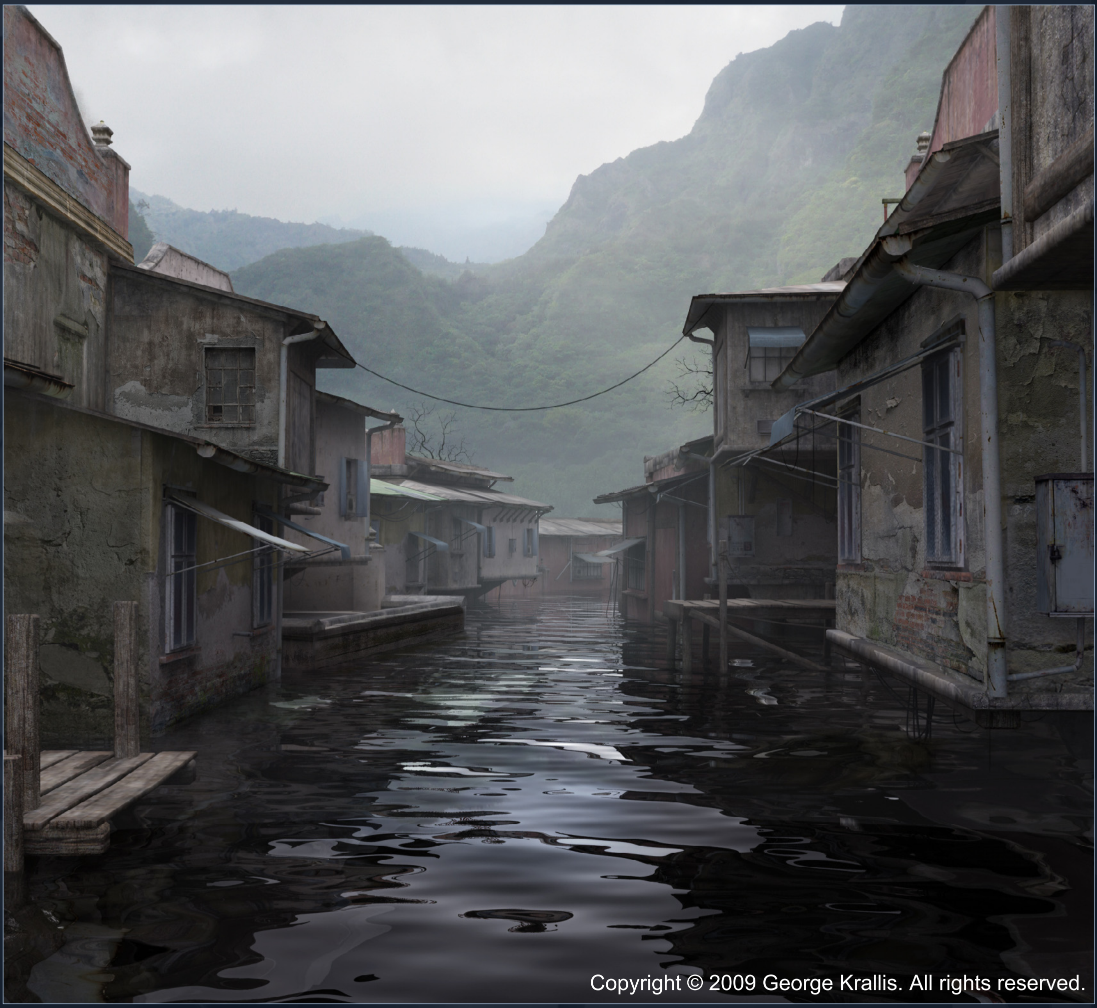
bgx@bgx.hu

WAITING FOR THE STORM

George Krallis

http://geograpcics.deviantart.com

george.krallis@yahoo.gr



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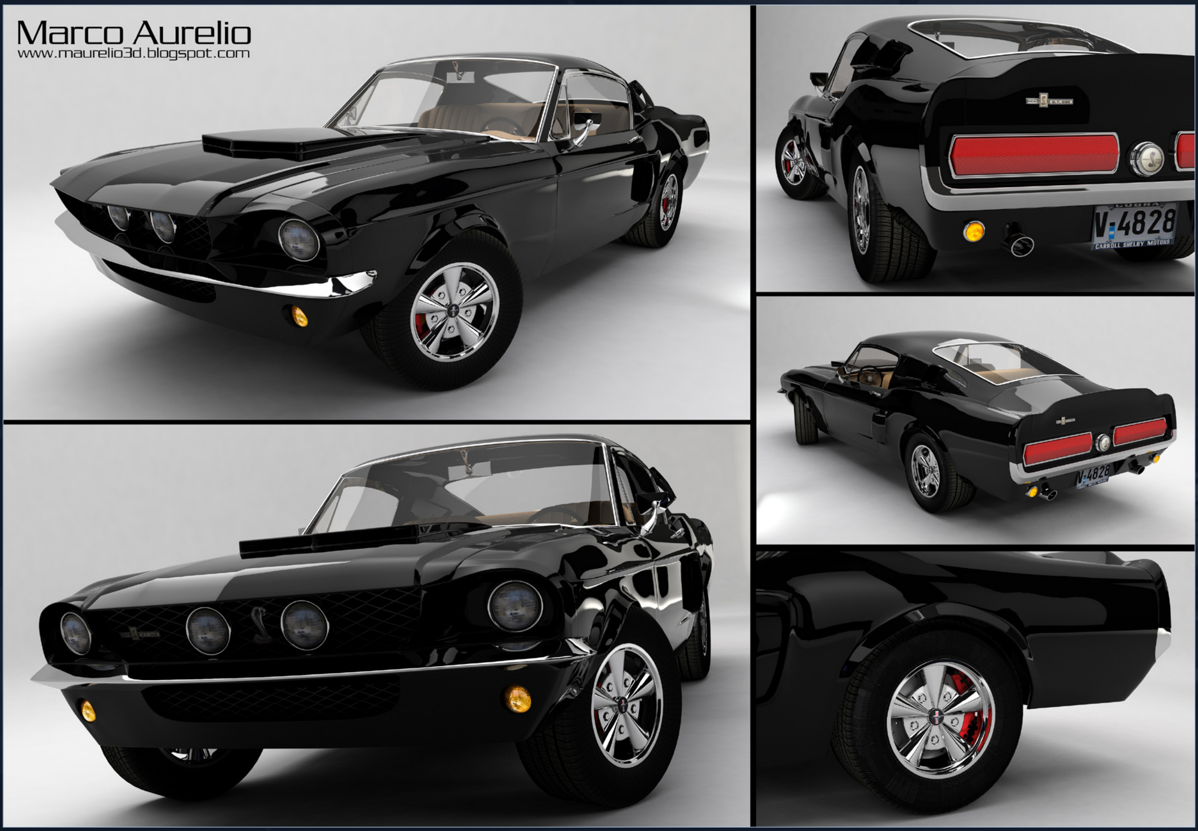
MUSTANG SHELBY 67

Marco Aurelio Magalhaes da Silva

www.maurelio3d.blogspot.com

mamsilva1@hotmail.com



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Roll
AI
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121.2
-0.108
-0.550
50
X:
Y:
U:
V:

Flip to Page 097 for Part 5 of this Mega Tutorial Series

Gothic Church

Interior Creation

3DSMAX | PAGE 097

MAYA | PAGE 107

LIGHTWAVE | PAGE 115

CINEMA4D | PAGE 129

MODO | PAGE 137

This series will provide an overview of the principal techniques used to create a gothic interior based upon a concept painting along with a tutorial on the process of sculpting a gargoyle character in ZBrush. Key methods covering modelling, texturing, lighting and rendering will be outlined over the course of the series and culminate in a chapter on post production and how to composite numerous render passes into a final image.

FOLLOW

The final part of our gothic interior scene, follows Zoltan Korcsok as he takes the render passes and coverts them into stunning final images. Zoltan will provide the final instalment for each software program which can be found at the back of this months magazine.

MINOTAUR

Welcome to the Speed Sculpting section of 3DCreative magazine. Each month we will give two talented ZBrush sculptors a brief and a base mesh from which they are to interpret and speedily sculpt a model within a suggested time. Here we will show the stages of creation of their “speed sculpts” in the form of mini tutorials. You will often find free movies to accompany these tutorials, and we hope that this series will be successful and thrive for many months to come!

This month our two skilled speed sculptors are **Sean Langford** and **Tomasz Kwiecinski**, who are tackling the brief:

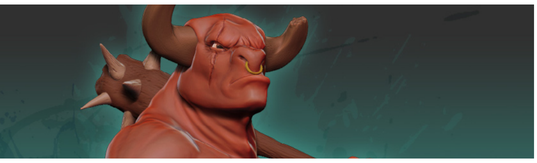
Minotaur

If you’d like to follow along with these tutorials, we have provided the same free base mesh for you that we also gave to these two artists for their own speed sculpts. Download your own base mesh from the **Free Resources** logo below and get sculpting! Enjoy!

FREE RESOURCES DOWNLOAD HERE

SPEED SCULPTING

SPEED SCULPTING FANTASY MINOTAUR

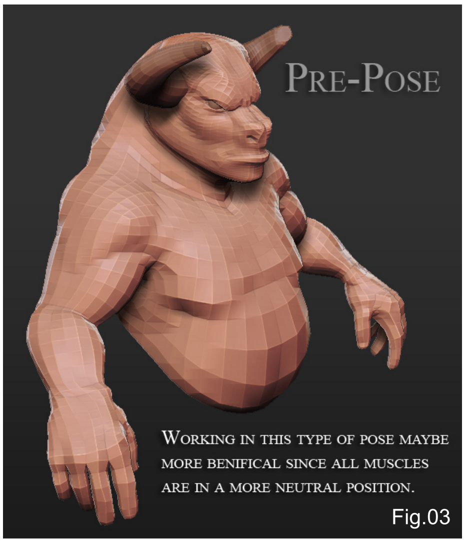


SEAN LANGFORD

Created In: ZBrush

I was quite excited when I found out that this month's speed sculpting subject would be a Minotaur. I know that the Minotaur has always been a popular subject and that there are hundreds of different concepts that I could have chosen from. But ultimately, I felt that a speed sculpt was best suited for quickly sketching out a new idea, and not trying to re-create someone else's concept.

So to begin, I import the base mesh and immediately break it into a couple of useful Polygroups (**Fig.01**). Separating the head, torso and arms is usually the best place to begin. This allows you the flexibility of quickly isolating certain elements of your model, so that you can focus without stumbling around the other parts. I also decide to use the Smooth brush to remove the ear and face details as I know I won't be staying with human features around the head.


Pre-Pose

Working in this type of pose maybe more benifical since all muscles are in a more neutral position.

Fig.03

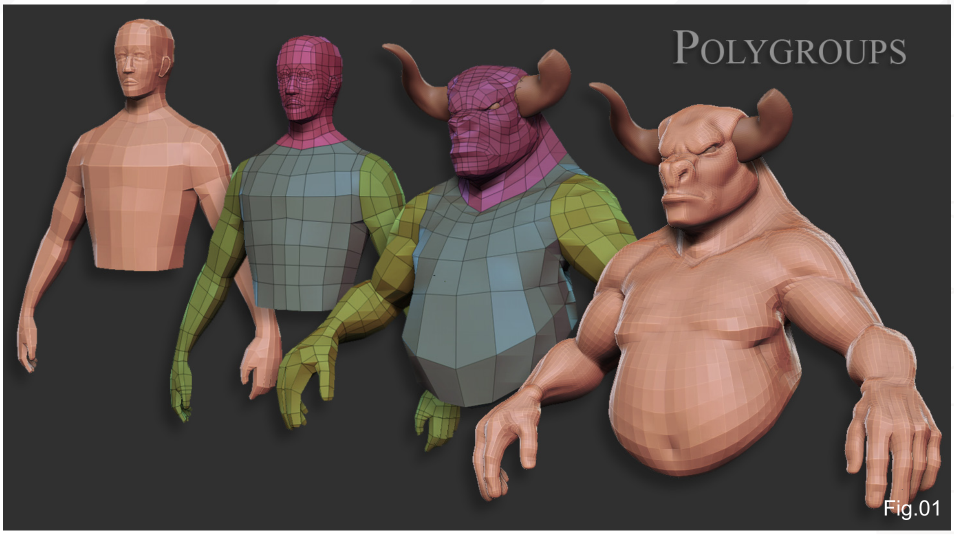
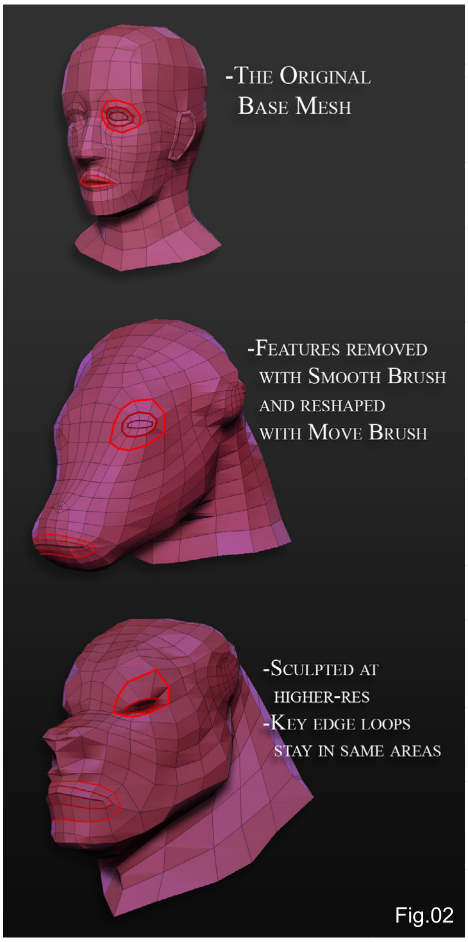

Polygroups

Fig.01

From there I go straight to the Move brush to reshape the base mesh. For sculpts that require a lot of variation from the original base mesh, the Move brush will save a lot of time when compared to building up the mesh stroke-by-stroke.

My first task is to re-purpose the head's geometry. With X symmetry turned on, the Move brush quickly helps me pull out the snout and bulk up the neck and shoulders. I also use the Move and Scale tools to adjust the size and position of the head to achieve better proportions. The Move tool also helps me move the shoulder further back than it was in the original mesh. Utilising my Polygroups, I quickly mask the head and torso and adjust the arms.

Now I have the basic form a little closer to what I want, I move onto the Clay brush for a first pass of sculpting. It's best to always work with the lowest subdivision possible, and then move up slowly level by level, but personally I like to begin by dividing once or twice (at most). This makes it a little easier to visualise my shapes and gives me a little more flexibility to work in major details, like eye sockets. While programmes like ZBrush will allow you to push a mesh really far, every mesh has a limit to how far you should push it. It's important to remember that when you are altering a starter mesh because you really need to keep an eye on the wireframe. It is very easy to end up with a wireframe that has become an utter mess with too much mesh in simple areas and not nearly enough mesh for more complex parts.


-The Original Base Mesh

-Features removed with Smooth Brush and reshaped with Move Brush

-Sculpted at higher-res
-Key edge loops stay in same areas

Fig.02

For this mesh, I try to keep its landmarks, like the loops around the eyes and mouth, in the appropriate areas (**Fig.02**). After figuring out some of the major forms, I activate the wireframe (Shift + F) and use the Move brush to make sure the mesh is still distributed properly. I also decide to try and keep things clean by using SubTools where appropriate. Things like the horns, eyes and nose ring can be sculpted into the base mesh, but ZBrush's primitives and ZSpheres allow you to quickly and easily add extra elements, without pushing the base mesh too far. I append a sphere for the eye and mirror it with the SubTool Master (**www.pixologic.com/zbrush/downloadcenter/zplugins**) to place the other eye. This is quick enough so as not to waste valuable time, but also allows me to sculpt a more convincing eye. If you're a ZBrush user, I highly recommend checking out Pixologic's plug-ins. Besides the SubTool Master, there are also several other plug-ins that can cut down on time. I also use SubTool Master to append and mirror a simple mesh made for the horn.

At this point I am still working on the Minotaur's basic form. A lot of characters are built in the classic T-pose, which helps a lot with rigging, but is quite rigid and emotionless. Since a speed sculpt isn't really done for production, I usually work in a more relaxed pose (**Fig.03**). I use the Rotate tool to move the arms out away from the body and to bend the elbow in slightly. This type of pre-pose not only allows you to sculpt the muscles in a more neutral state than the standard T-pose, but it lets the character "breathe". When I began this sculpt, I didn't have a set idea in mind ... so as I work, I look for ways to let the character develop on its own. If I start to see a bit of personality that I like in the rough form, I just keep digging around until it begins to surface more. Oddly enough, the standard T-pose never really seems to let a character form any real personality. Even a fantastic, finalised character seems really dead in the T-pose. So my pre-pose process is kind of a waste for production models, but I think it's a necessity for speed sculpting characters.

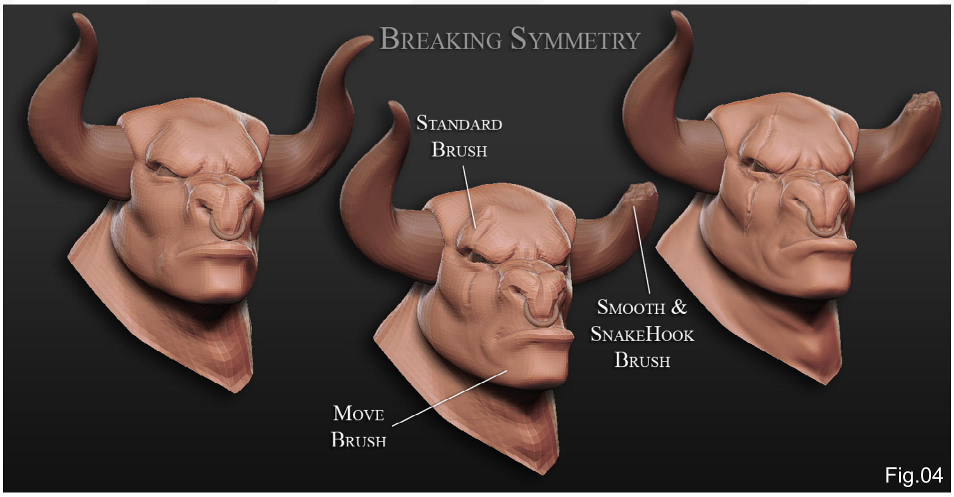


Fig.04

From here I move into sculpting the next level of details. To make sure everything well proportioned and will fit together, I start outlining landmarks like the collar bone, rib cage, pectorals, and other major muscles. I've seen a lot of beginners waste time by starting at the head and detailing their way down to the toes. In doing so, they may miss a muscle group, build something way out of scale, or lose all sense of proportion. Placing the landmarks first is like finding the corners and outside edge of a jigsaw puzzle – you have a better foundation to build from.

While the Inflat brush is great for forming the base muscle shapes, I still use the Clay brush for 90% of my sculpting. While I am trying to stay within a four hour time limit, I use about half my time at this level. As I work on the hands, I realise that I've forgotten to separate the fingers into their own Polygroups; going so far as to also separate each finger into its own Polygroup can make working on the individual fingers much easier, as you can quickly hide the other fingers and access the entire digit from all sides.

I decide I want an overweight but tough Minotaur, so I go through a lot of references to make sure my forms and silhouette work. Once I decide his structure and muscles are well under control, I break the symmetry and decide to add a little more character (**Fig.04**). I break his left horn by masking all but the tip and smoothing it until it recedes back far enough. The Flatten brush knocks it back the rest of the way, while a small SnakeHook brush adds the jagged effect to the end. Also, using the Move brush, I give the jaw a slight angle to push his expression just a little more. And while he seems tough enough, I think the stereotypical bad-guy eye-scar will also be a fun addition. For this, I just use the Standard brush to cut it in. I turn on the Lazy Mouse option to keep it from getting too varied

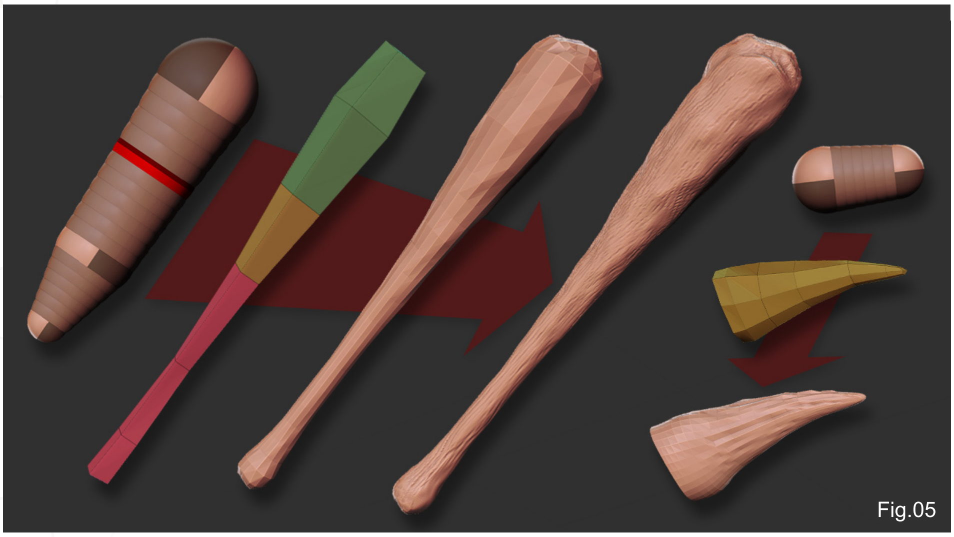
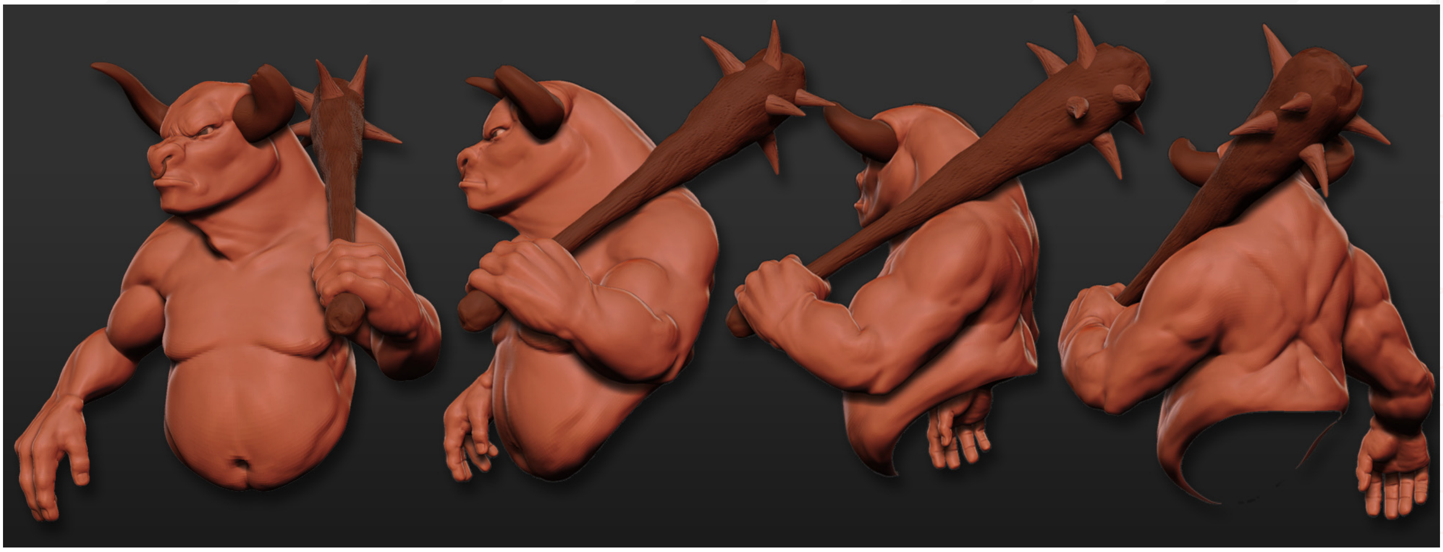


Fig.05

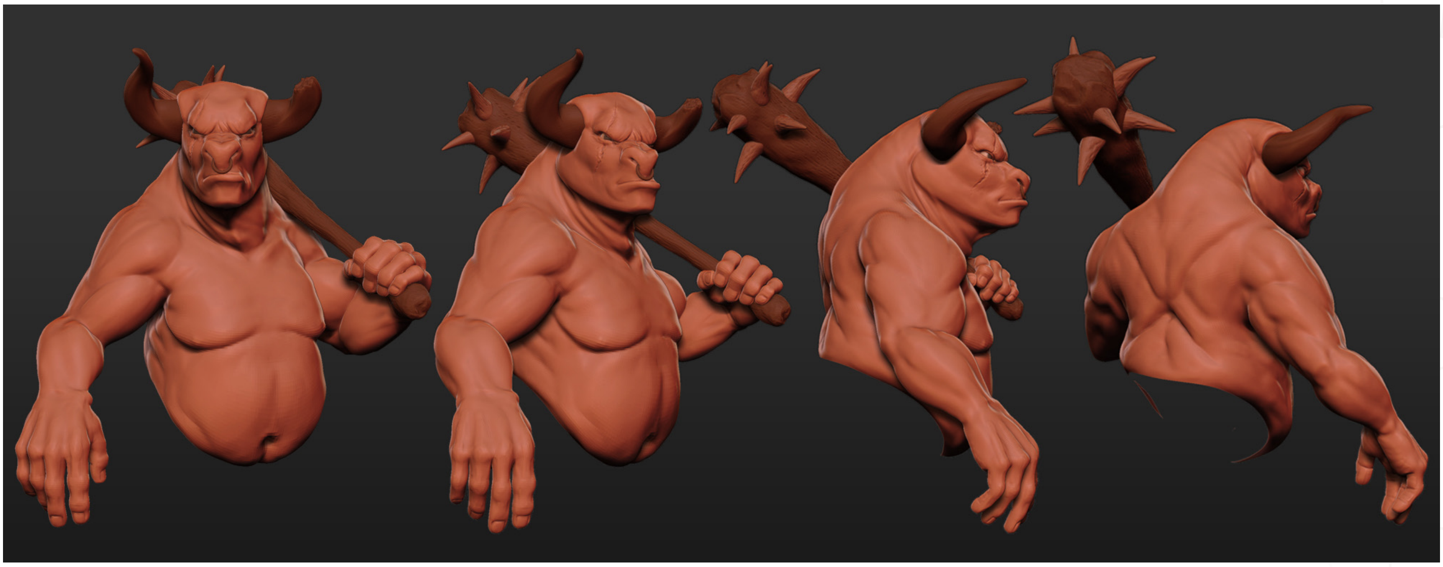


in depth, but I set the step settings down to three so that I can still vary the direction easily enough.

At this point I have been thinking about his pose for a while. This Minotaur has presented himself as a tough and proud fighter, so I think he should have a weapon. With my time limit approaching, I don't have time to go into another programme and build an intricate weapon, plus it kind of defeats the purpose of a speed sculpt. Luckily I know ZBrush's ZSpheres can create a simple mesh inside of ZBrush that I can easily chisel into a crude weapon (**Fig.05**). I start by selecting the ZSphere tool, adding another slightly larger sphere on one end, and then adding two smaller spheres on the other. When converted to an Adaptive Mesh, this gives me a simple long box that I divide and form into a crude club. I append the club into the Minotaur tool, and use the Rotate, Scale and Move tools to adjust its proportion and position. I then realise that I cannot actually place the club until he is in a more suitable pose, so this leads me nicely into the posing phase.

While Pixologic has a wonderful plug-in that allows you to pose a mesh and its SubTools at the same time (**Transpose Master: www.pixologic.com/zbrush/downloadcenter/zplugins**), in this case I decide to do a sort of reverse pose. Though I want to turn his head, I actually mask the head and rotate his body in the opposite direction. Since he is just a bust and there is no real reference to an actual ground, this works out pretty well. I don't have to use any plug-ins or try to move any SubTools, and it doesn't cost me any time.

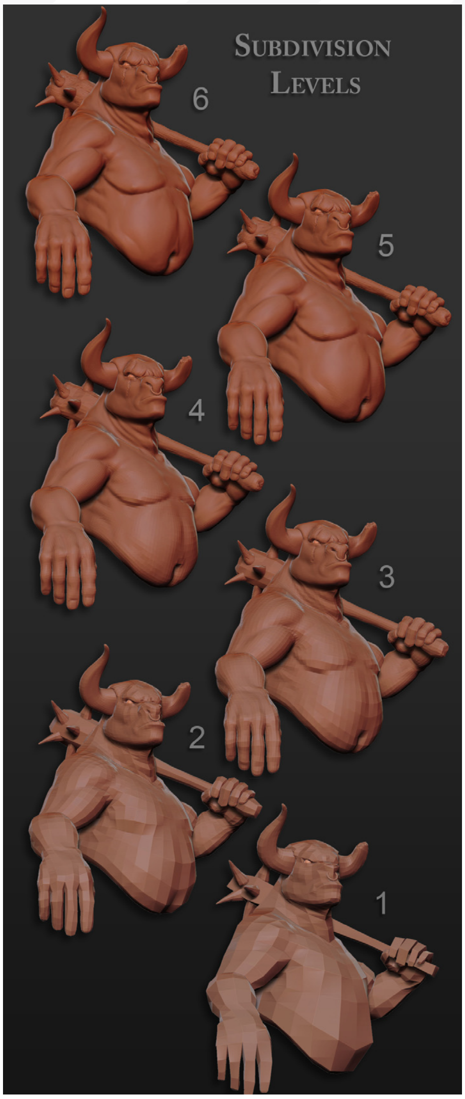
At one of the lower subdivision levels, I finish posing the Minotaur using the Rotate tool. The best way to think about posing in ZBrush is to use the Rotate tool like a re-positionable bone. To move the arm, freeze everything else and place the tool where the actual bone will be. For example, when trying to bend at the elbow, actually place the tool inside the arm's geometry, with one end at the elbow and one at the wrist. If the tool isn't placed where the actual bone should be, you will not get an accurate deformation. Also, for tighter joints like the fingers or elbows, try posing with a tighter mask at a slightly higher subdivision level.

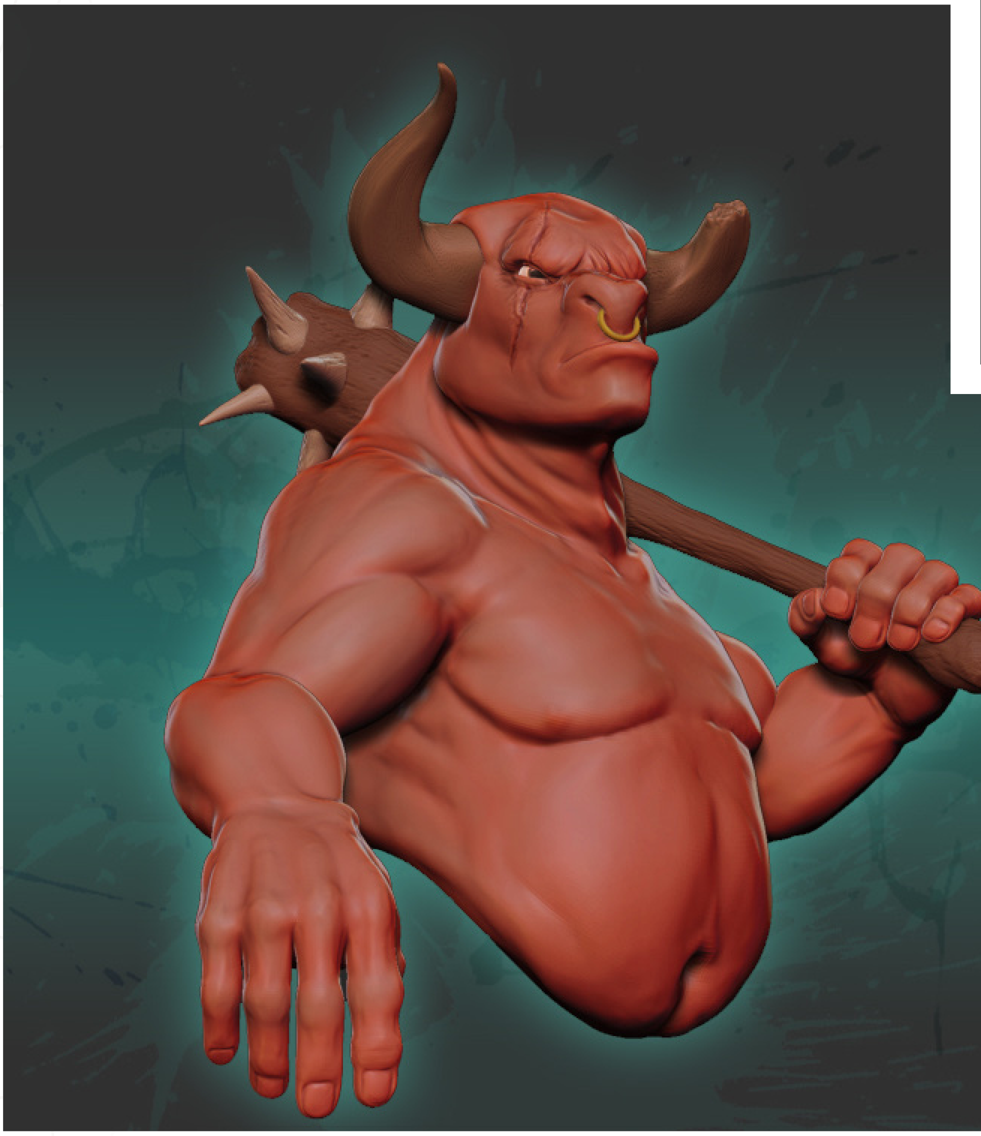


Once the Minotaur is close to posed, I finish placing the club and adjust his grip to the handle. Then, using the same ZSphere method, I append a simple mesh to shape into a spike for the club. Again, the SubTool Master allows me to duplicate the spike and place several around the end of the club.

So now my time is almost up. I don't have time to go into the high-res details and since the character feels complete enough without them, I just leave them out (you know what they say: less is more). I do, however, have time for a quick Polypaint pass. For the horns, ring, club and spikes, I simply choose an appropriate colour and choose Fill Object under the colour menu. For the body, I fill it with a light pink, and then use a darker red to add more depth to areas like the scar, under the eyes, the chest, and the valleys between the muscles. This, and adding the pupil to the eye, very quickly brings a lot of life to a simple sculpt.

I try to learn something from each and every project I do, and this one really goes to show how awesome speed sculpts can be for finding a character. I didn't know exactly what I was going for and could have wasted hours trying to detail out ideas that I may not have ended up liking. Speed sculpting is just like sketching with a pencil and paper – it's fast and loose, can get you a lot further, and may have much better results than trying to detail everything from the start.





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SEAN LANGFORD

For more from this artist visit:
http://www.seanlangford.blogspot.com
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TOMASZ KWIECINSKI

Created In: ZBrush

The first thing I always do before sculpting anything is to look for references. In my opinion, good reference images are one of most important parts of modelling – it doesn't matter whether you're using ZBrush or any other 3D programme. I always have some anatomical images open on my second monitor so that when I'm not sure how to solve problems with the anatomy of any creature, I can inspire myself with real biological solutions. If you don't have two monitors you can always load reference images with an image plane plugin and place them on your ZBrush canvas.

Starting this one, I don't have a precise idea of what I want to achieve, only a general image of a man with a bull's head. You can see in the movie that the proportions and look of my Minotaur change almost right up to the end of the sculpting process. The ability to change the proportions of your model, even in an advanced phase of the work, is one of best advantages of using ZBrush or Mudbox. Simply go to lower subdivision level, use masking and free transform, Move or the Standard brush, and you can do almost anything without destroying details on higher levels of subdivision.

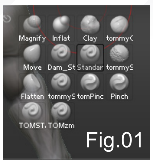


Fig.01

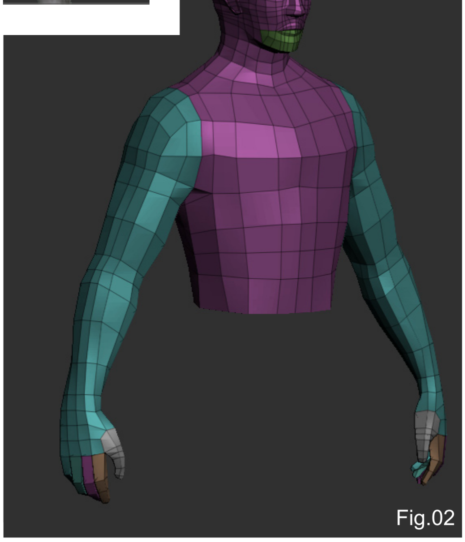


Fig.02

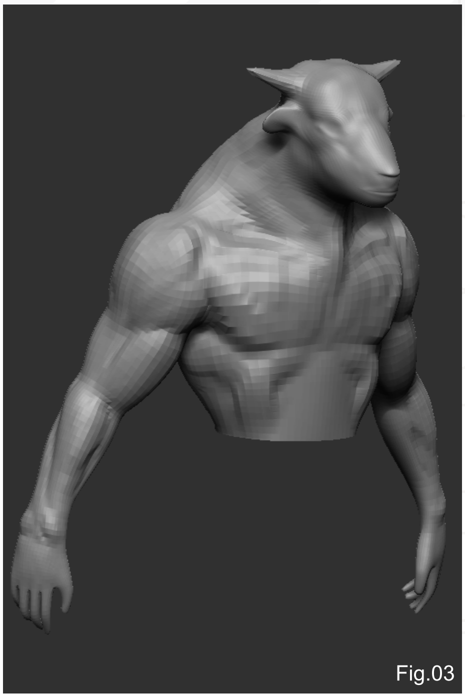


Fig.03

When I'm working I like to have all my brushes ready at hand. I don't really change brush parameters like Brush Mode or Gravity during sculpting, therefore I prepare and save several versions of them with different parameters and names. Because it's difficult to find the right one if you have lots of versions in the brush menu, I create my own brush menus and hotkeys (**Fig.01**).

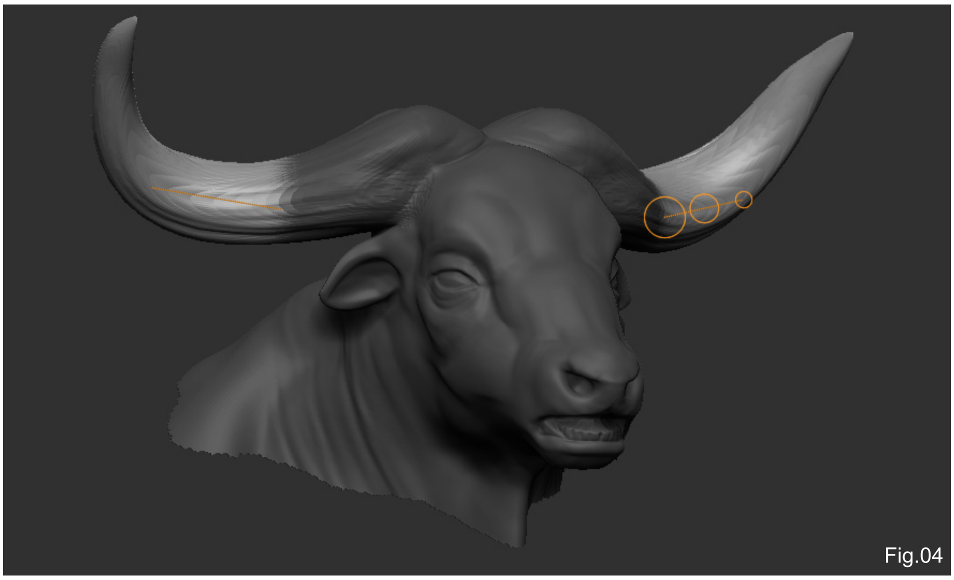


Fig.04

To create your own brush versions, go to the brush rollout and select, for example, the Standard one. Below the brush icons you can find several sliders and buttons. Two of the most important settings are Brush Mod and Gravity. The Brush Mod slider set to a positive value adds a pinch effect to the Standard brush (which is good for sculpting wrinkles and final details). With the Gravity slider, you can define the strength of Gravity applied to your brush when sculpting; you can also change the direction of Gravity by moving the arrow on the side of the slider. Adding a Gravity effect to your brush can be very helpful when sculpting wrinkles, skin folds or clothes. When your brush is ready, press the "Save As" button in the brush rollout, enter a name and save it to ZData\BrushPresets in your ZBrush install folder. Now your brush will load every time you start the programme.

Tip: If you want to know the function of any button or slider in the ZBrush interface, simply place your cursor over it, press and hold Ctrl, and you will see a description of it.

You can create your own menu In Preferences > Custom UI. Press Enable Customize and Create New Menu. Your new menu should appear on the top menu bar. Now just drag your menu to the side panel and simply move the brush icons onto it using the left mouse button whilst holding down Ctrl. When finished, turn off Enable Customize and Ctrl-click on your menu to add a hotkey. Don't forget to save your changes in Preferences > Config > Store Config, or Save UI.

I usually start my work on a model by creating Polygroups, to make sculpting and posing easier later on. I create Polygroups for the fingers, arms and any the part of body where I think it will be helpful (**Fig.02**). To create a Polygroup simply hide the unnecessary parts of the model, and then click Group Visible in Tool > Polygroups.

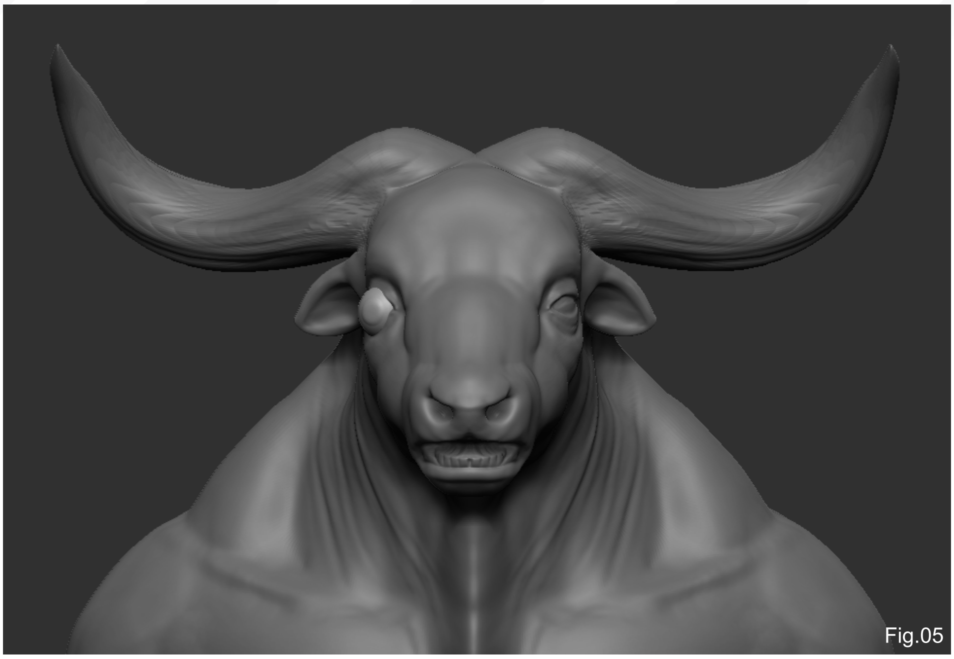
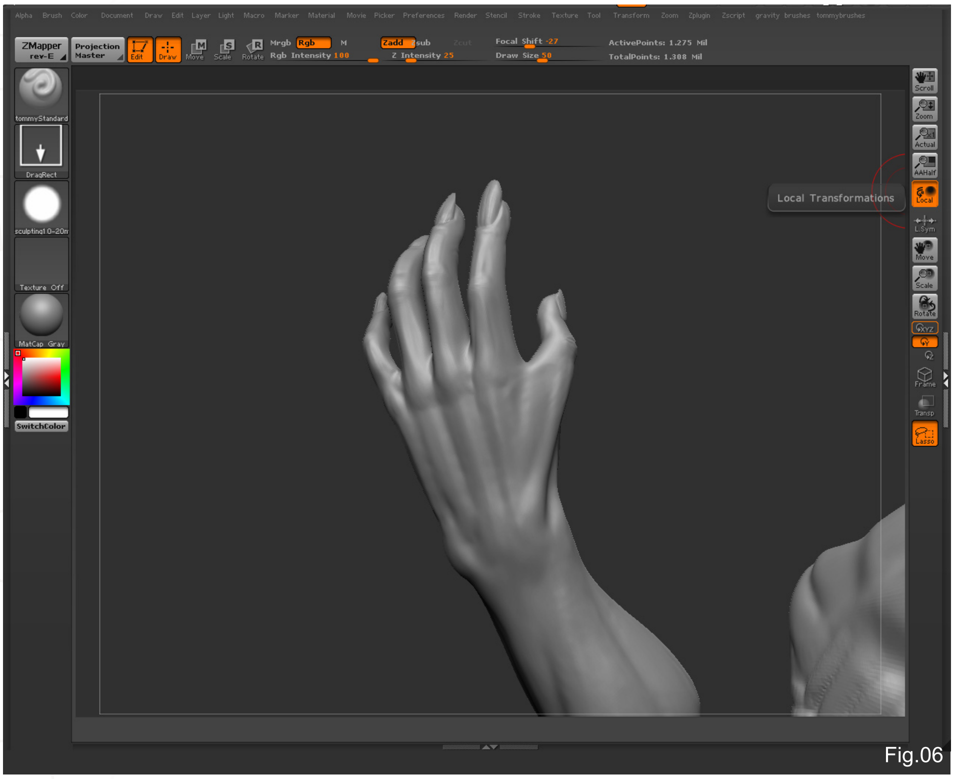


Fig.05

With Polygroups created I start moving the mesh using the Move brush, and sculpting at the lowest level of subdivision (Standard and Clay Tubes brush with Alpha 06), with the Draw Poly Frames option on (Shift + F). Trying to place the mouth and eye edge loops in the right position, I change the form of the head and neck to be more bull-like in shape. Still using the same set of brushes, I create the basic body shapes of the torso and arms.

When sculpting muscles with Clay Tubes I like to follow the anatomical direction of muscle fibres – from the centre of the chest to the shoulders, or, for example, on the biceps from the shoulder down to the elbow. It's important to remember the bone structure below the muscles; marking the ends of bones and joints can be very helpful when trying to create good anatomy (**Fig.03**). Similar to marking bones and joints I cut the edges of the main muscles on the arms and back with a small Standard brush (Alpha 58, Brush Mode set to around 30) and fill the forms with Clay Tubes.



Rgb Intensity 100
Z Intensity 25
Focal Shift -27
Draw Size 50
ActivePoints: 1.275 Mil
TotalPoints: 1.308 Mil

Fig.06

To create the horns I paint a circle with mask (holding Ctrl), blur it (click on the painted mask holding Ctrl) and pull the geometry with a big Snake Hook brush. After creating simple horns I subdivide the base mesh a couple of times to increase geometry density and, using a mask, I rotate with free transform and the Move brush to make them look more interesting (**Fig.04**). I continue by fixing errors left after changing the shape of the horns with the Smooth (intensity reduced to 30) and Clay Tubes brushes.

After the horns I decide it's time to make him some eyes. When sculpting the eye area I like to use an eyeball for assistance (**Fig.05**). To create my eyeball I use a simple sphere with slightly changed proportions (the eyes aren't perfectly spherical) and add it to my model using the SubTool menu Append button. With the eyeball placed in the right position it is easier now to sculpt the correct eyelids, reflecting the spherical shape of eyeball beneath them. I use the Pinch and Standard brushes with Alpha 58 and Brush Mode set to 30 to create the sharp edges of the eyelids and wrinkles under the eyes.

Next, using an existing Polygroup, I mask the lower part of mouth (Ctrl + Shift-click on your Polygroup to hide the rest of model, mask it, and then unhide all with Ctrl + Shift-click on canvas). With the mask inverted (Ctrl + I) and blurred I use free transform to open the mouth. Typically, I like to hide the mask (Ctrl + H) to have better visibility during transformations. To create the teeth and gums I use the same technique as when sculpting the muscles before; I sculpt lower teeth first and then the upper ones, partially over the bottom set.

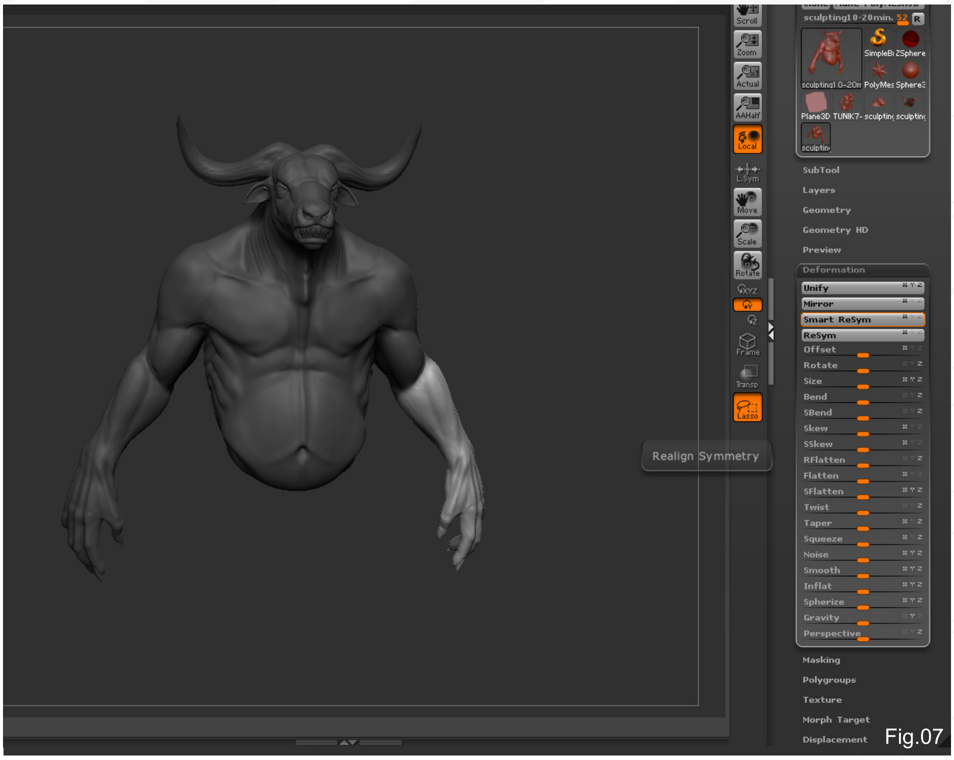


Fig.07

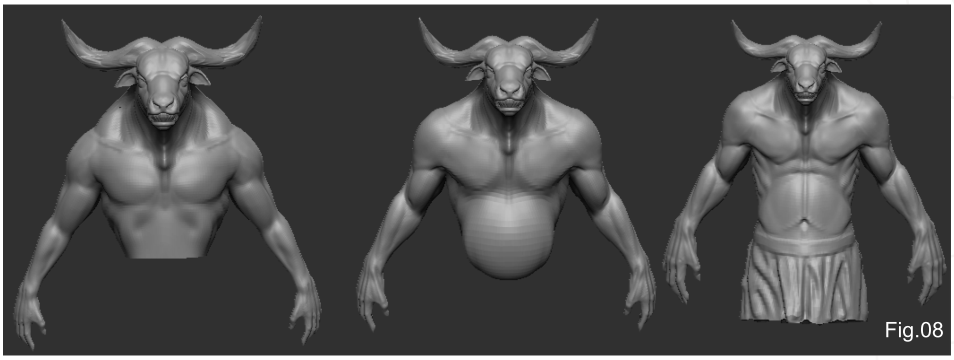


Fig.08

Next I jump to the hand. To make my navigation easier I activate Local Transformations in the Transform rollout (**Fig.06**). With Local Transformations on I can rotate around part of the model I'm working on so I don't have to hide the rest of the geometry. When making palms I use the existing finger polygroups and topological masking to make some basic posing. I push the fingers away from one another to make sculpting easier. To add some volume to the fingers I use the Inflat brush and then Clay Tubes to make them more square in form. It's important to remember that fingers are not completely oval in shape if we don't want them to look like sausages … With the rest of the hand I work in the same way as before with the torso or hands – I mark the important points of structure like joints, ends of the bones, tendons and then sculpt the main muscles with the Clay brush. To make the nails I simply mask the tips of the fingers, add some volume with the Clay brush and use the Move brush to pull out the fingers. When working on thin surfaces like nails or wings, for example, turning on the Backface Masking in the brush options can be very useful, preventing your brush from affecting the back-faced side of the surface.

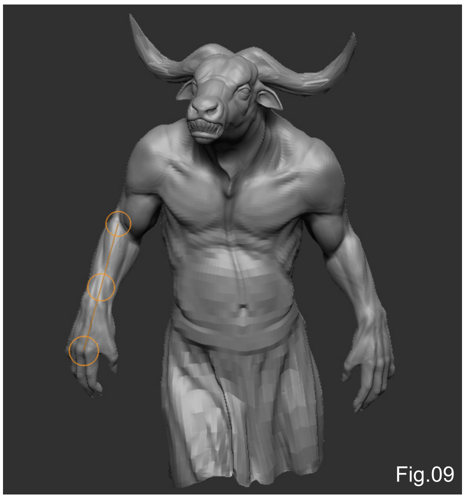


Fig.09

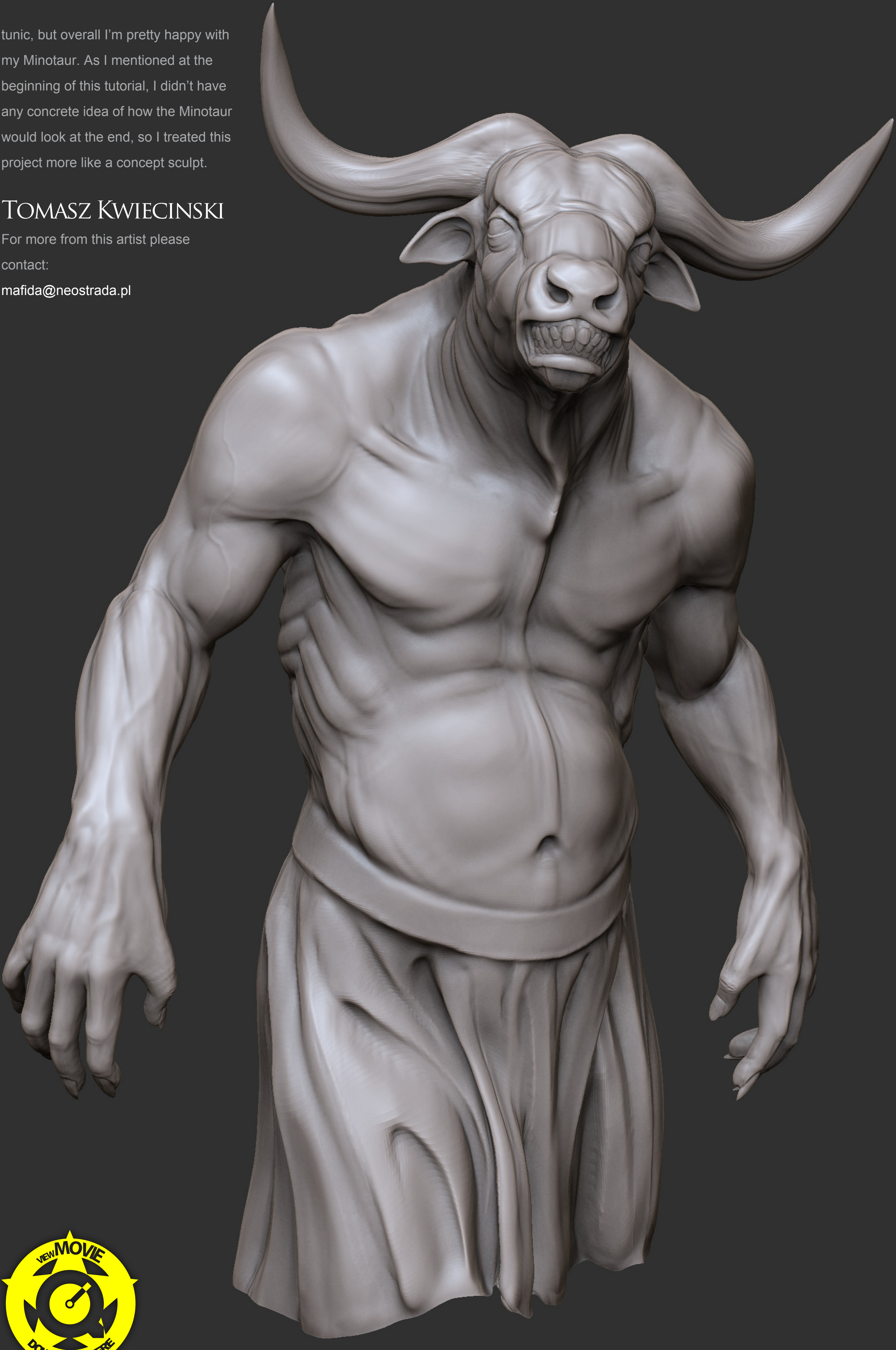
I notice some symmetry problems here with the second hand, and so I use Smart ReSymmetry to resolve it (mask the part of the model you don't want to be affected and use the Smart ReSymmetry button in the Tool > Deformations rollout) (**Fig.07**).

Next I decide to make some proportion corrections (**Fig.08**), simply using masking, free transform and the Move brush. Finally, I sculpt a little dress for my Minotaur to make him more interesting. To make cloth wrinkles I use the Clay and Standard brushes with different Gravity settings, and then use the Flatten and Pinch brushes to add the final details.

The very last step in the process is to pose the Minotaur. I turn off the symmetry and use free transform to make my basic pose. Using the Move, Standard and Clay brushes I then correct any posing imperfections and add some final details to finish (**Fig.09**).

All in all, the entire sculpt took me about four and a half hours of work (see final renders). I lost some time playing with the finger nails (by forgetting to turn on Backface masking), and I also could have saved some time by finding clothing references before starting work on the tunic, but overall I'm pretty happy with my Minotaur. As I mentioned at the beginning of this tutorial, I didn't have any concrete idea of how the Minotaur would look at the end, so I treated this project more like a concept sculpt.

Tomasz Kwiecinski
For more from this artist please contact:
mafida@neostrada.pl



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> "WHEN I START A NEW PROJECT, I LIKE TO DO SOME RESEARCH FOR REFERENCES, INFORMATION, INSPIRATION ... THIS WAY, I CAN START MY SCULPTING WORK WITH MORE OBJECTIVITY."

zbrush manimal
creation series: part 1 - bird - man

Welcome to the new ZBrush Manimal Creation tutorial series. Each month we'll see a new artist tackle one of our topics, who will take us step-by-step through the transformation of a generic human head and torso base mesh into a hideous amalgamation of man/creature of 3DCreative's choice! We thought that topics such as a bird, aquatic, and insect would be fantastic for detailed sculpting work – and on top of all this, the artists will texture their models, too, bringing these monstrosities to life. So stay-tuned over the next six months to see what they come up with, and to learn a thing or two about detailed sculpting and texturing in ZBrush.

The first part of this tutorial series will see **Bruno Melo** cover the development of a **Bird-Man**. Enjoy!

manimal
zbrush creation series

BIRD-MAN

Created In:

ZBrush, 3ds Max & Photoshop

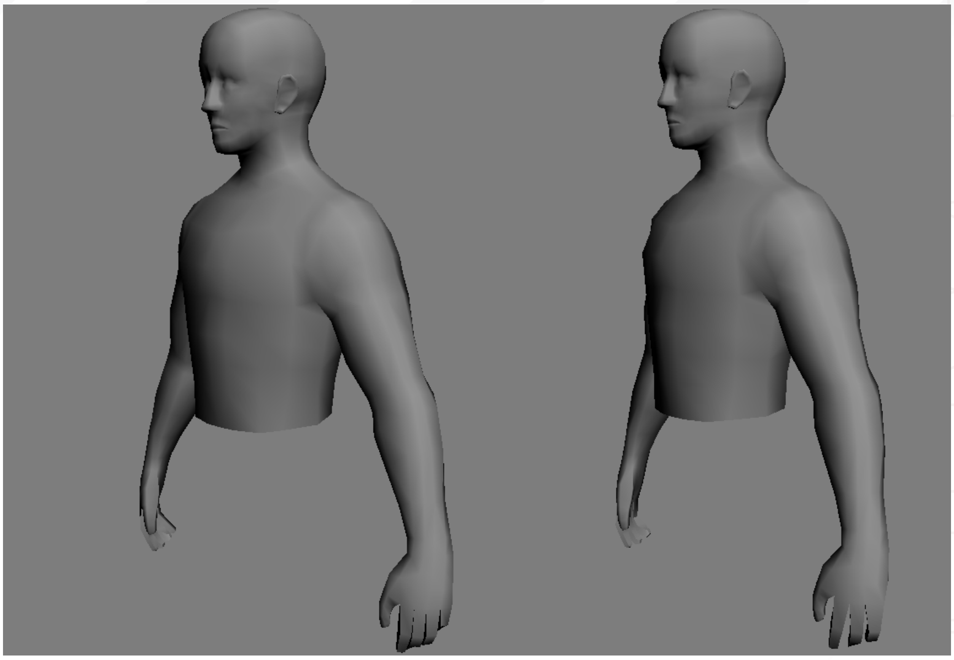
INTRODUCTION

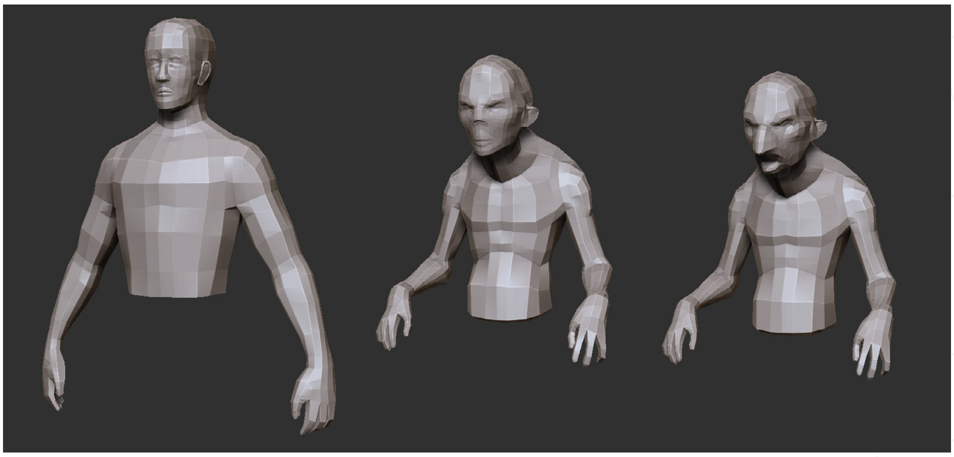
I'm going to kick this brand new "Manimal" series off this month by sculpting and texturing a "bird-man". I will need to sculpt a creature with some aspects of both a bird and a man, and then texture it to complete the tutorial. I'll walk you through my creative process and my workflow, discuss those things that are most important, and explain some tips and tricks that I use when creating characters in ZBrush. So let's get started!

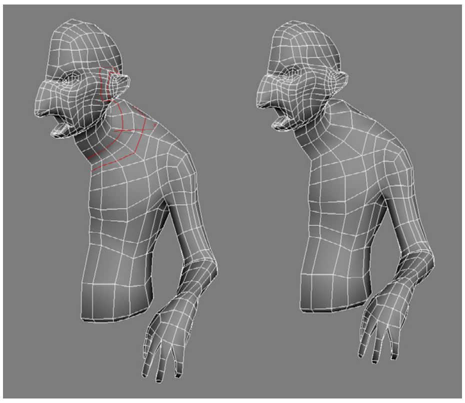
CONCEPT

One of the most common mistakes that I see people make is starting to work without first thinking about what it is they're doing – they just open ZBrush and start to sculpt. When I start a new project, I like to do some research for references, information, inspiration, or simply look for something that will help me to find an interesting idea based on my theme or brief. This way, I can start my sculpting work with more objectivity.

So with this I mind, I begin this project by searching for some photographic references of different types of birds – some even in action (flying, eating, etc.) – just to work out bird features and gestures to help me with my initial ideas. I choose certain bird features, such as a beak, thin skin, the gesture of an infant bird, and the humpback feature found in some birds, to mix with human anatomy. With some of this information I can start the next step. If you want to, it can be pretty interesting to sketch some ideas down at this stage of the process, but as I have an idea in mind about what I'm looking for I'm going to go ahead without any reference drawings.







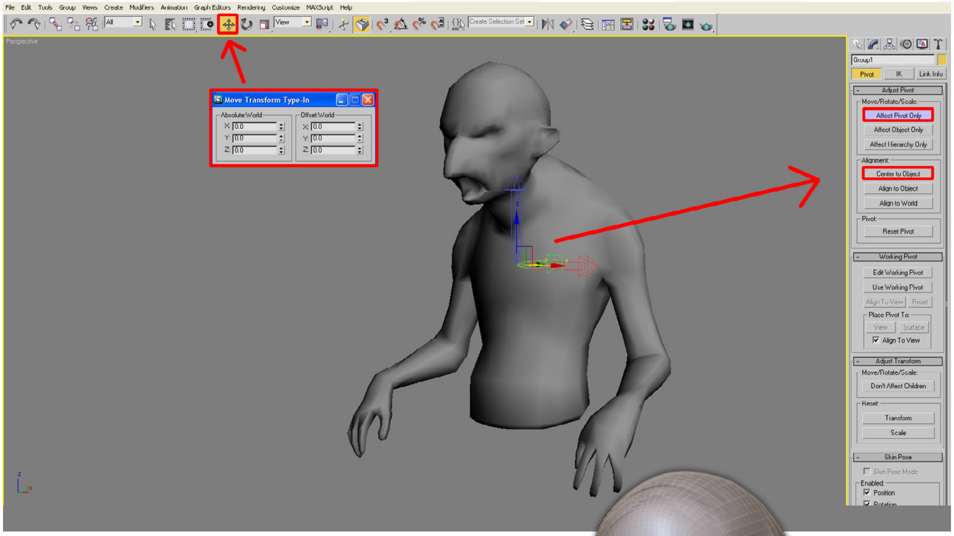
BLOCKING IN

The first thing that I do with the base mesh provided for this project (**Fig.01** – the base mesh is free for download with this tutorial) is remove one of the fingers – I think that a chicken's foot will best describe what I have in mind.

After starting to block in the model, I get an idea for the final pose, and so I decide to sculpt with the arm bent to help with the pose later on. To make these changes I simply use the Transpose tool, with masks on areas that I don't want to make changes to (using Rotate (hotkey R) and Move (hotkey W)). I also use this simple base mesh to block the beak onto, just to help me in this initial stage (**Fig.02**).

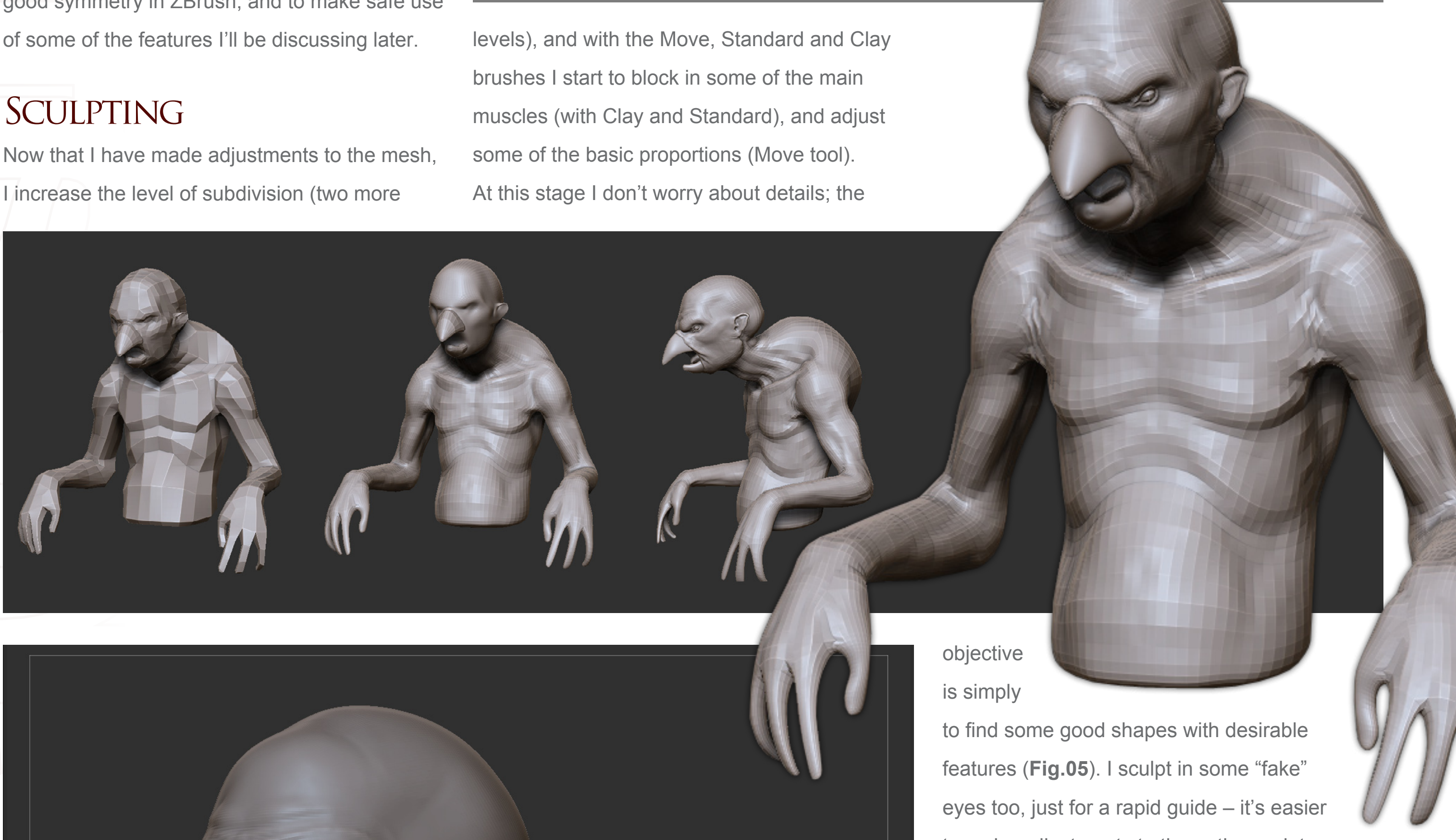
I will now export my base mesh to 3ds Max to add some edges and fix any possible errors/make any necessary adjustments in order to prevent potential problems further down the line (**Fig.03**). For this character, adding edges will not be very important, so I simply put some edges in to increase the amount of polygons in these areas when subdividing the model in ZBrush, therefore avoiding any problems with low resolution in areas that need more definition.

It's very important to verify whether the model will have perfect symmetry, whether the pivot is in the centre of the object, and if the model is in the centre of the "absolute world" (just right-click, select and move to access Move Transform Type-In, as seen in **Fig-04**). These adjustments are very important in order to make good symmetry in ZBrush, and to make safe use of some of the features I'll be discussing later.

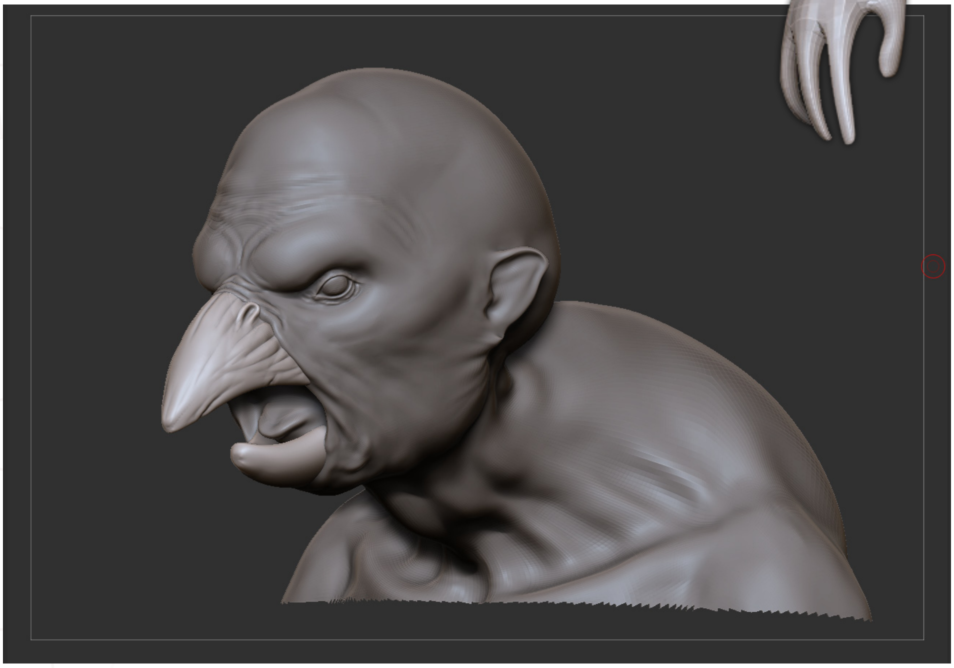


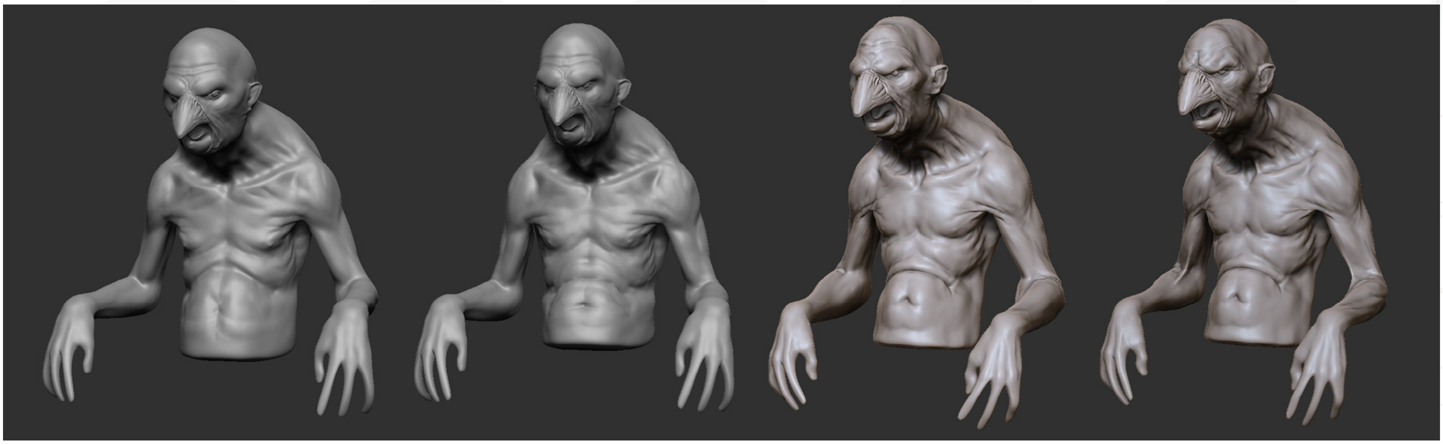
SCULPTING

Now that I have made adjustments to the mesh, I increase the level of subdivision (two more levels), and with the Move, Standard and Clay brushes I start to block in some of the main muscles (with Clay and Standard), and adjust some of the basic proportions (Move tool). At this stage I don't worry about details; the objective is simply to find some good shapes with desirable features (**Fig.05**). I sculpt in some "fake" eyes too, just for a rapid guide – it's easier to make adjustments to the entire sculpt without many SubTools. Later on, I will use some spheres as eyes.



I like to isolate some parts and work with pieces of my model (such as the head) when necessary. I sketch in some details to give the head a better overall look, whilst still keeping the details rough (**Fig.06**). This block-in step is one of the most important; I spend a lot of time experimenting and testing some things out at this stage. I also often change the materials as



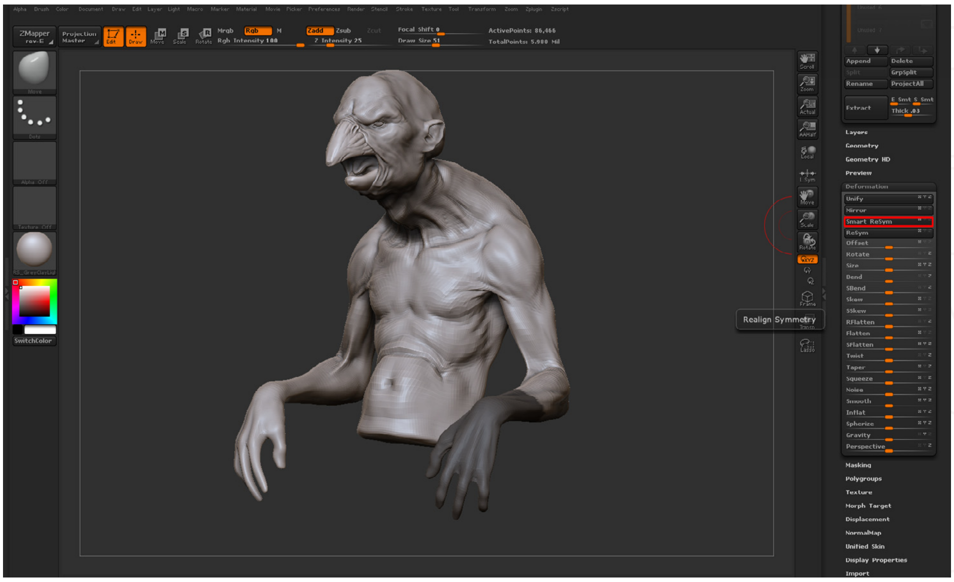


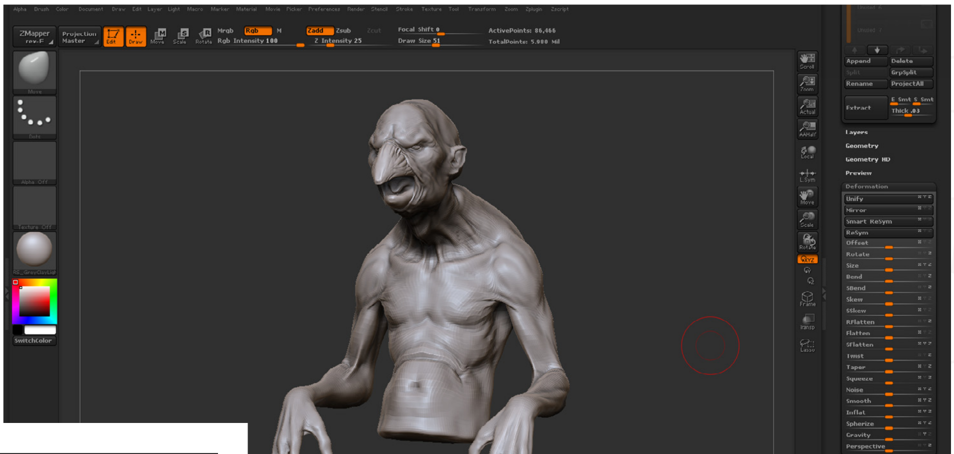
I work in order to see my model better at the different stages.

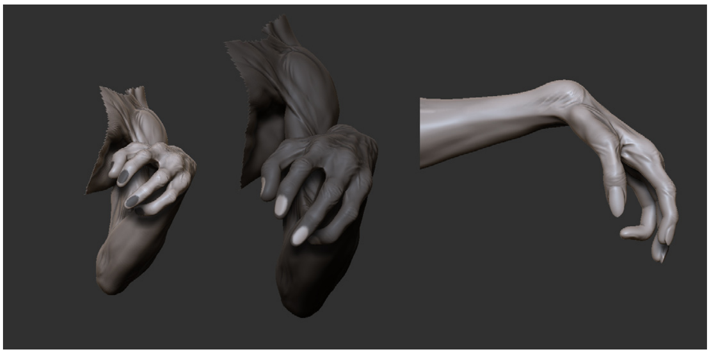
I'm happier with the overall proportions now, and so I subdivide a few more times and start to apply the medium level details, like muscle definition, cartilage, and skin creases and folds, using the Standard brush with some alphas, like Alpha 35, 36, 37, 38, and 39. This, combined with a bit of the Inflat tool, can make a fleshier and more believable model, but I still need to check some of the proportions and make some much needed changes before I'm fully happy (**Fig.07**).

For the hands, I always sculpt one isolated hand and then project all details onto the other hand. To do this, I create a mask over the newly sculpted hand, go to Tools > Deformation, and press Smart ReSym (**Fig.08**).

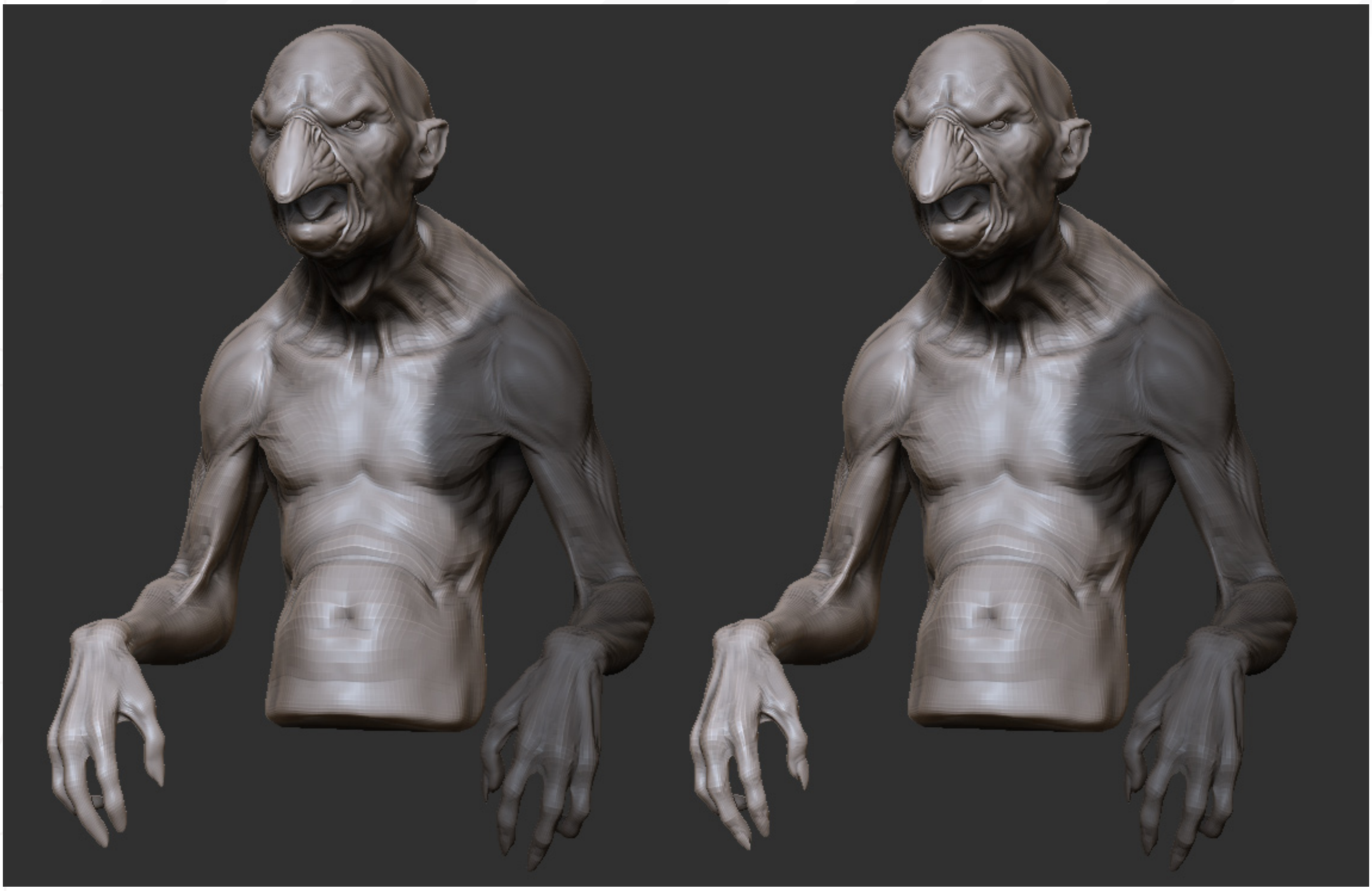
This tool will recreate a mix of projection on both hands, but my intention is to preserve the sculpted hand, so with the mask any details will not be lost, and the other hand will be given the same details (**Fig.09**).





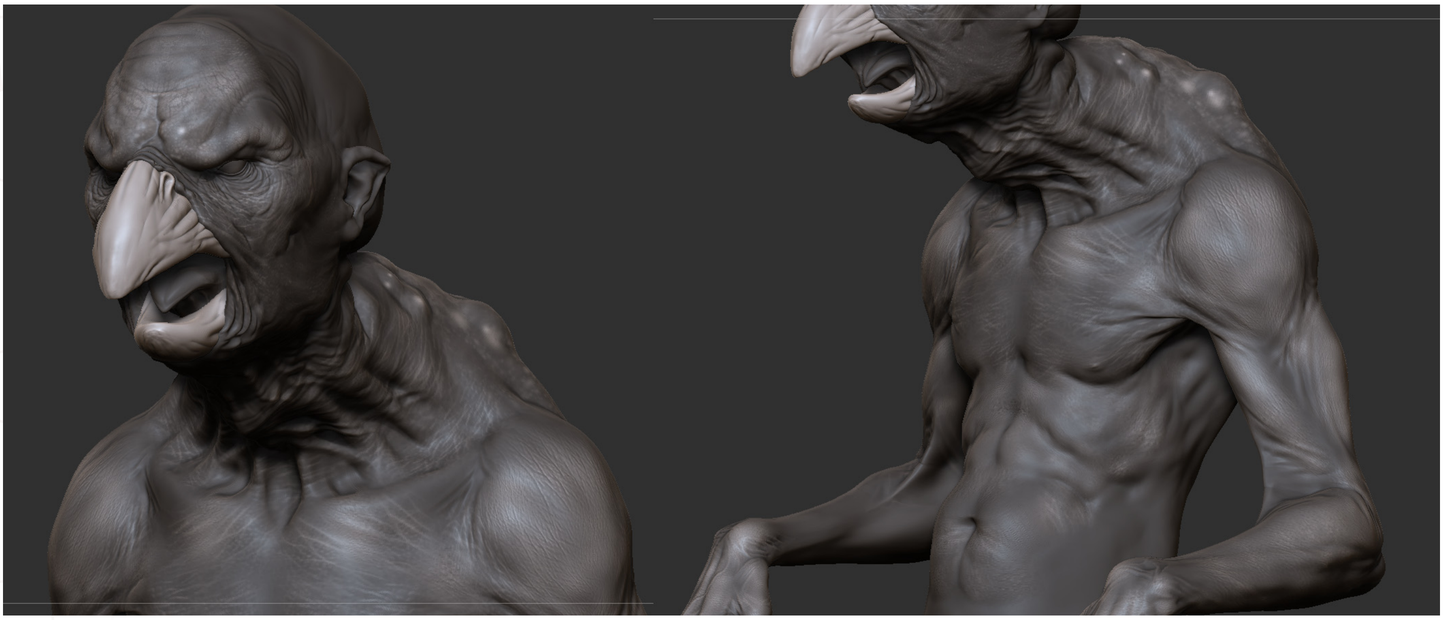


I make use of a mask for the nails, too. I draw a mask in the desired form for the nails and then invert it. I use the Move and Standard brush to pull off all the nails, and with the Smooth brush I soften the shape before inverting the mask again. With the Inflat brush I can then work on achieving some great volume (**Fig.10**).



I'm using Smart ReSym again now, but this time I'm working with more details. I always start using Smart ReSym at the lowest levels of subdivision and will use it again for each level of subdivision ahead, but it's important to be careful because it's very common for crashes and errors to happen. So always save your work before you perform this kind of task on your model (**Fig.11**).

For the final details, I use the Standard brush with a thin alpha (like Alpha 39), sometimes with Lazy Mouse turned on, for laying down some wrinkles, as well as the Inflat and Clay brushes with alphas (Alpha 01, for example). To make the final details I start to use more skin alphas (human skin, reptile, pores, etc.) over the entire sculpt – but not as a sculpting tool; I use masks over some parts (**Fig.12**) and I can then sculpt over with different intensities and brushes (Standard for all details, and then a little bit of



Inflat in some areas to get a more natural look).

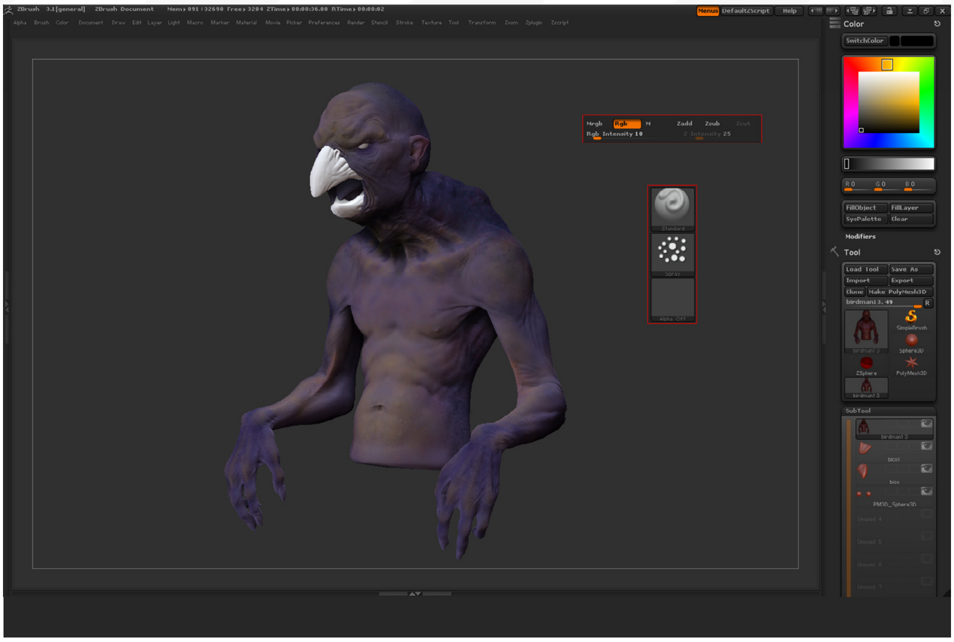
This workflow is a very nice way of controlling skin details, and for finding what I'm looking for (**Fig.13**).

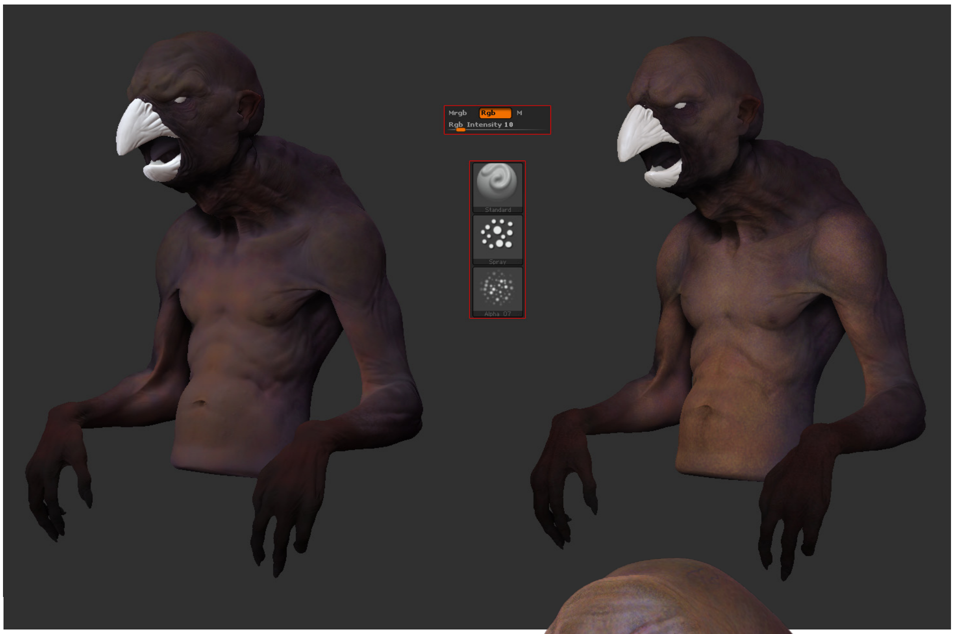
Texturing

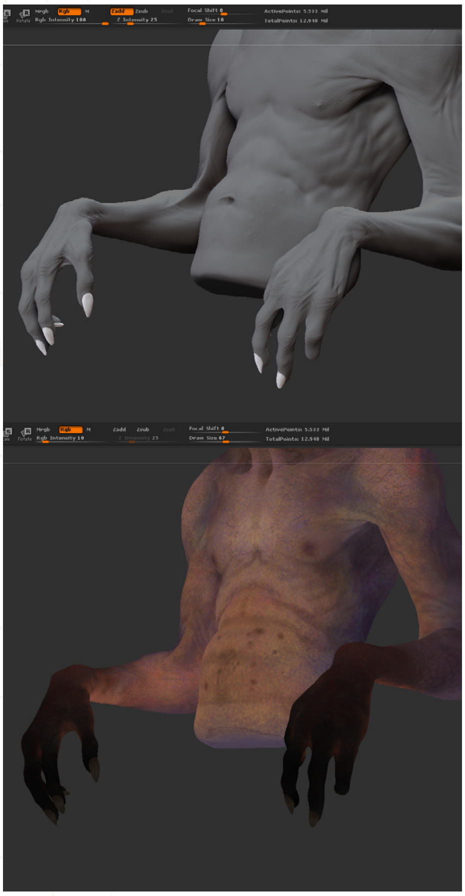
I usually use MatCap White to begin my texture work, starting my texturing job with Polypainting. I make a rough base colour over the entire sculpt (Menu > Colour > Fill Object) and define some warm tones (like the ears, and thin skin, and so on) (**Fig.14**).

I then paint some tonal variation onto the model using the Spray brush with Alpha 07 (always using a low intensity), mixing the colours (**Fig.15**).

For the nails, I paint a mask in order to texture the nails only (**Fig.16**). For the final details I use DragRect stroke with some alphas, like Alpha 22 for veins and Alpha 08 for small skin details. On the beak I use a photo edited in Photoshop, and apply it using DragRect. In this case I use a single texture from the Total Textures DVD collection (www.3dtotal.com/textures) (**Fig.17**).

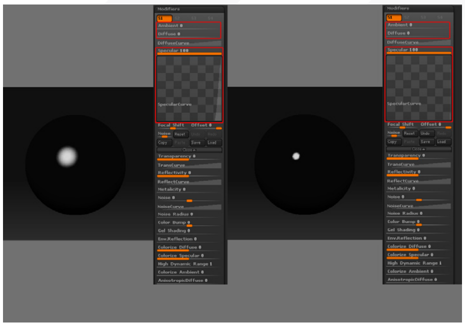






Posing & Final Adjustments

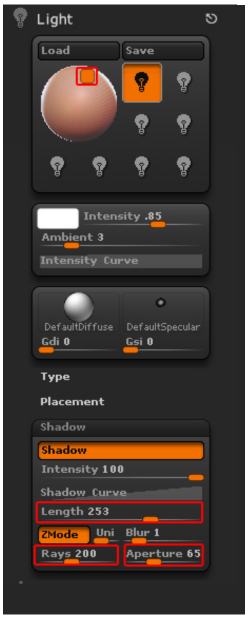
I decide to keep the post for this character very simple; I use the Transpose Master for the main deformations, and then use the Move brush for some adjustments with Transpose, too. I try to keep the pose simple because my intention is only to break up the symmetry a little in order to get something more dynamic (**Fig.18**).

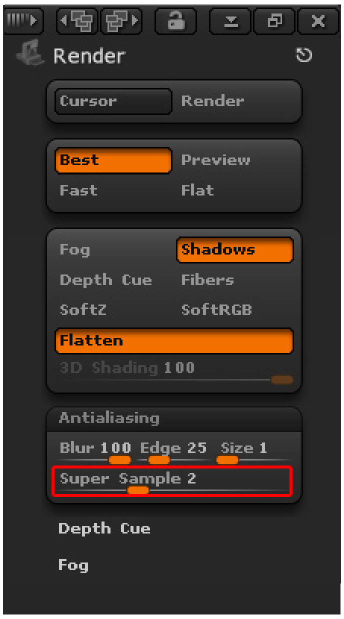


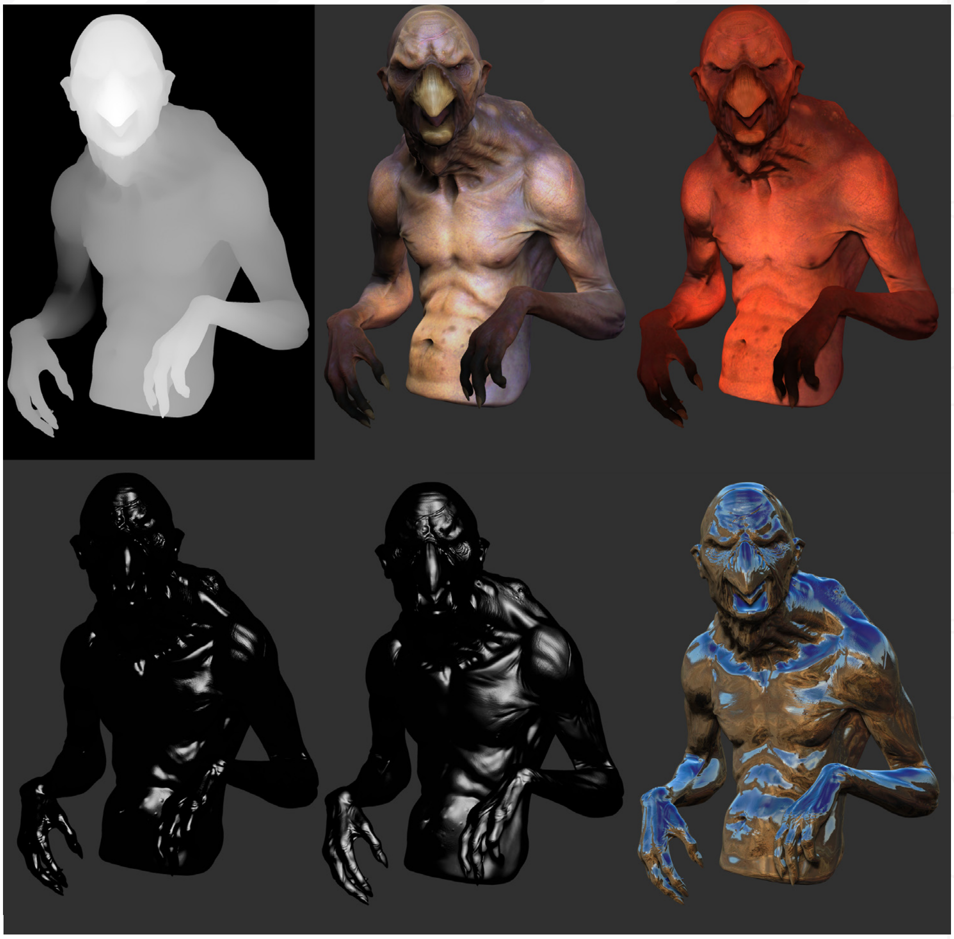
RENDERING & COMPOSITING

I use GW_Skincore as the main final shader (which can be downloaded at www.pixologic.com, thanks to Grant Warwick), two Toy Plastic shaders (with some adjustments made in Material > Modifiers to show only specular, and in SpecularCurve), one for a more "open" specular, and another for a thin specular, as shown in the example (**Fig.19a**), a Reflected Mat Material for fake reflections, and a custom shader for SSS (Sub Surface Scattering) (**Fig.19b**).

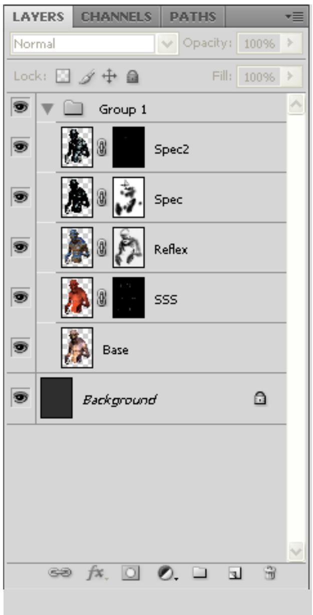
For the lighting settings I make some shadow adjustments to get a harder shadow (keep the Aperture around 50-70 and Length about 250), and I change the position of the light (go to Light menu > Shadow) (**Fig.20a**). For the render settings I simply adjust the Super Sample to 2 (Render menu), as shown in the example (**Fig.20b**).







With Photoshop I blend all layers using some blending modes like Multiply, Overlay, Soft Light, and Lighten. To be honest, this part is very intuitive; I don't use the same blending mode for every work as a general rule, as I prefer to make many tests to get what I want for each layer. I also use some masks to control the intensity of each layer; for example, to control the specular intensity in regions that don't need too much specular (**Fig.21**).



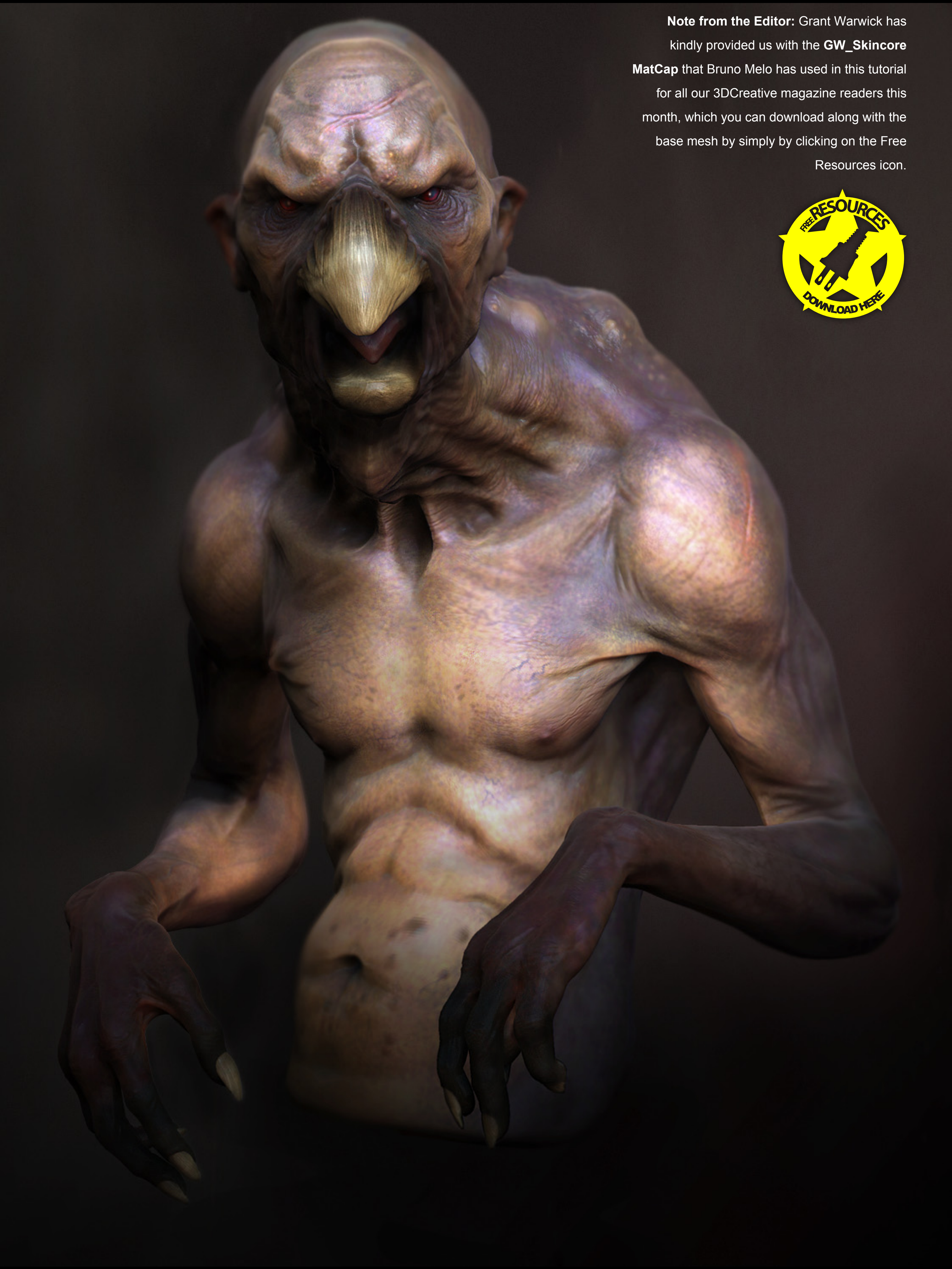
And here is the final result after some correction work done in Photoshop (**Fig.22**).

CONCLUSION

Well, I have tried to show my workflow, especially in the ZBrush sculpting stage. It has been lots of fun working on this bird-man creature; I hope you've found the tutorial useful and you're pleased with the final image after seeing the work in progress. Please feel free to contact me by email should you have any questions. Thanks for reading!

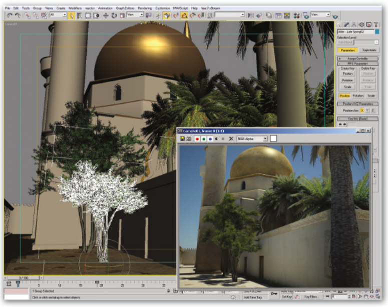
BRUNO MELO

For more from this artist please his website:
http://bmelo.cgsociety.org/gallery/
or contact him at:
bmmsouza@gmail.com

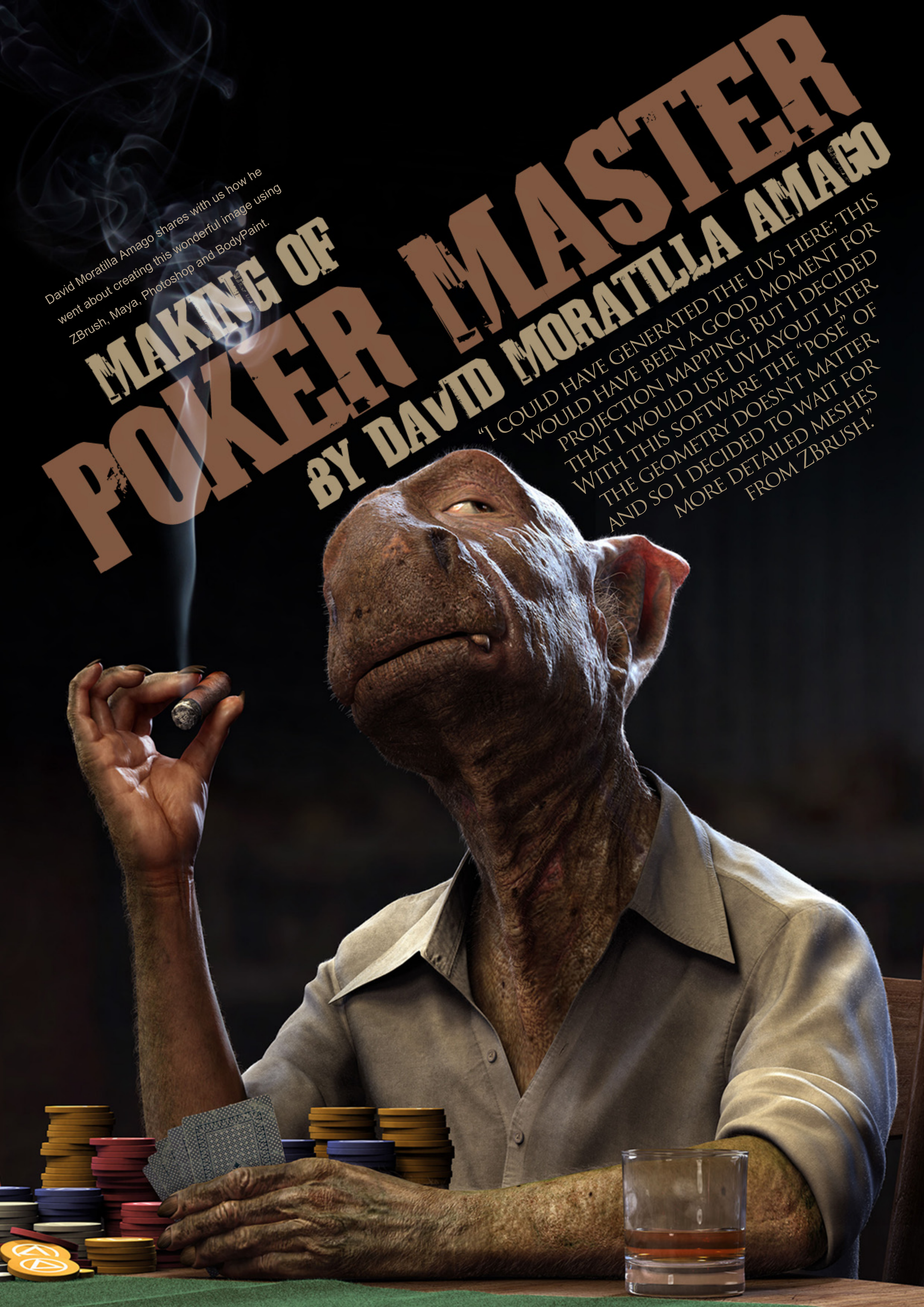


Note from the Editor: Grant Warwick has kindly provided us with the **GW_Skincore MatCap** that Bruno Melo has used in this tutorial for all our 3DCreative magazine readers this month, which you can download along with the base mesh by simply by clicking on the Free Resources icon.

Complete image production by Taylor James, for Motorola.



3ds Max mosque model, rendered in a Vue environment using Mental Ray Sun & Sky.



MAKING OF

POKER MASTER

BY DAVID MORATILLA AMAGO

David Moratilla Amago shares with us how he went about creating this wonderful image using ZBrush, Maya, Photoshop and BodyPaint.

> "I COULD HAVE GENERATED THE UVS HERE; THIS WOULD HAVE BEEN A GOOD MOMENT FOR PROJECTION MAPPING. BUT I DECIDED THAT I WOULD USE UVLAYOUT LATER. WITH THIS SOFTWARE THE "POSE" OF THE GEOMETRY DOESN'T MATTER, AND SO I DECIDED TO WAIT FOR MORE DETAILED MESHES FROM ZBRUSH."

MAKING OF
POKER MASTER

Created In:

ZBrush, Maya, Photoshop & BodyPaint

In this “Making Of” article I will try to explain the techniques that I used to create this image. I will focus mainly upon the creation of the character. I wanted to learn “new generation” tools, like ZBrush, and this project gave me the opportunity for exactly that.

MODELLING

I made a basic model in Maya, taking care to ensure that all of the polygons were four-sided (**Fig.01**), and then exported it to ZBrush.

I could have generated the UVs here; this would have been a good moment for projection mapping. But I decided that I would use UVLayout later. With this software, the “pose” of the geometry doesn’t matter, and so I decided to wait for more detailed meshes from ZBrush. I imported the OBJs into a ZBrush file using SubTools. I created some reference objects, like the table and cigar, and then posed the character using Transpose Master (**Fig.02**). Using the Standard and Move brushes, I then began the process of adding detail and refining the meshes. I continued this until I had something similar to the geometry that I wanted, but still with a low number of polygons (**Fig.03**).

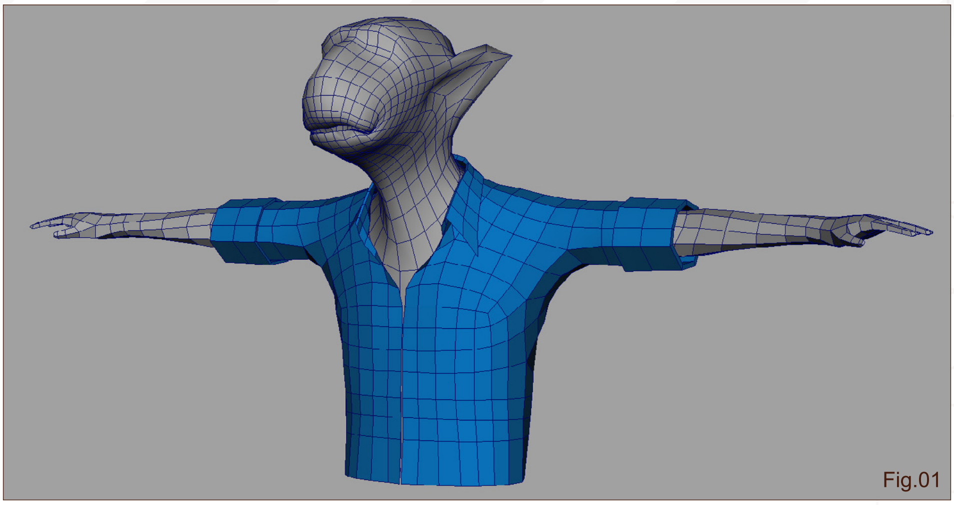


Fig.01

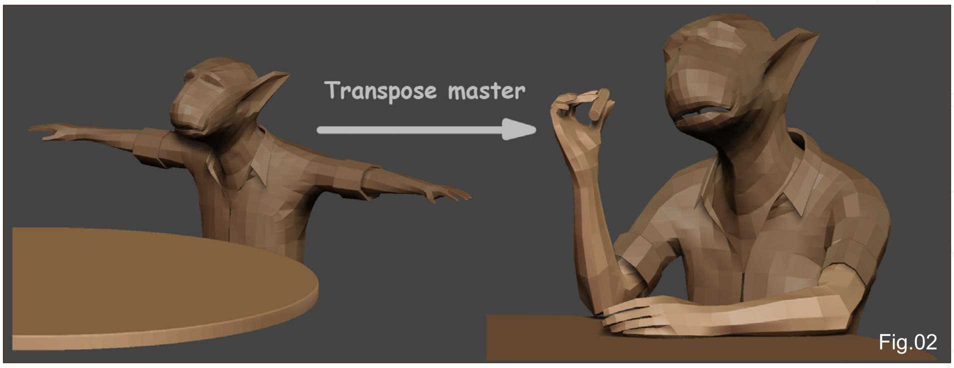


Fig.02

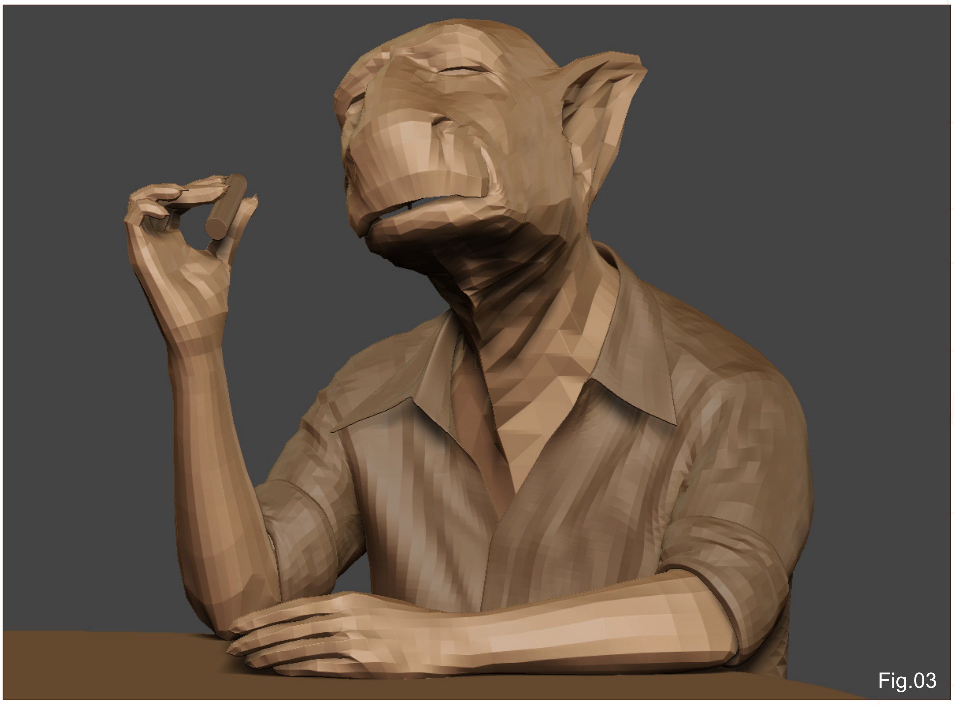


Fig.03

I deleted the polygons that were not going to be visible, like the torso and the interior of the shirt. I then had three different meshes: head, arms and shirt. I exported these meshes to OBJ format to create the UVs with UVLayout. In UV layout, I made some UVs shells for better distribution and less distortion of the UVs. I tried to place the seams away from the view (**Fig.04**).

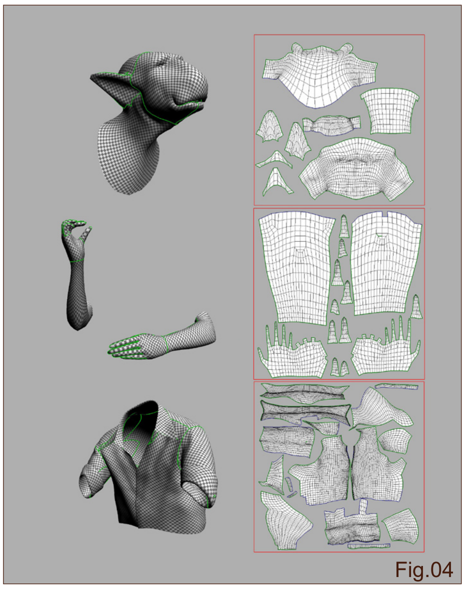


Fig.04

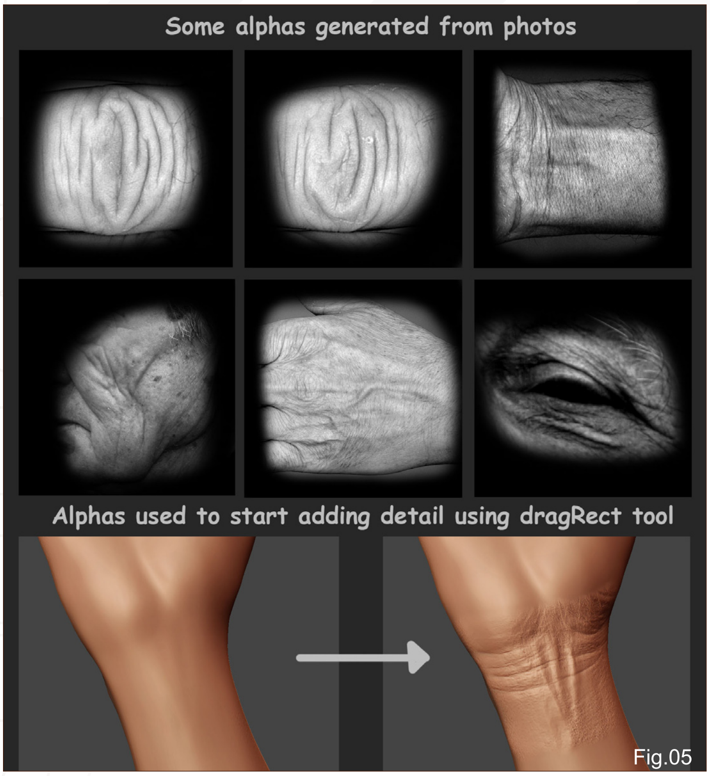
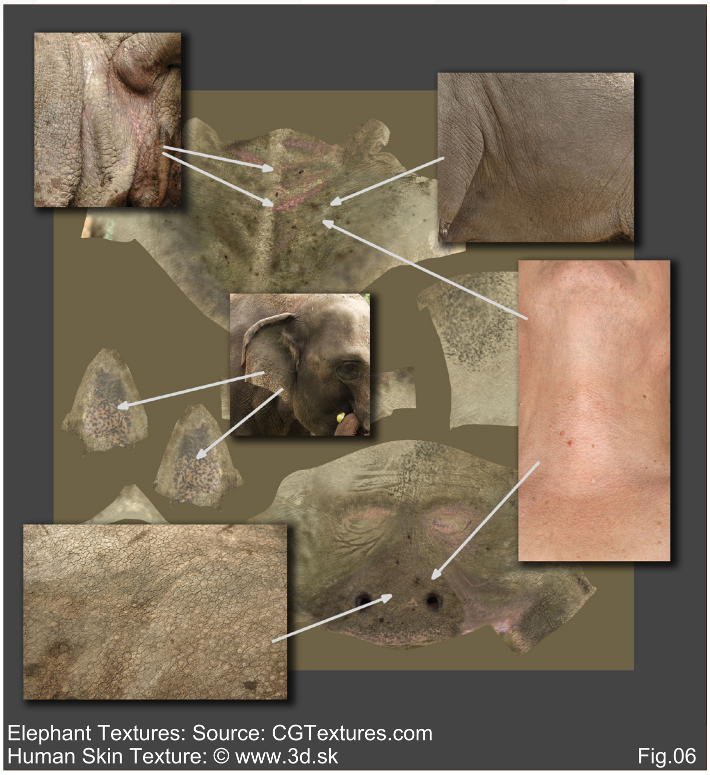

Some alphas generated from photos
Alphas used to start adding detail using dragRect tool

Fig.05



Elephant Textures: Source: CGTextures.com
Human Skin Texture: © www.3d.sk

Fig.06

DETAILING & TEXTURING

Once I had the OBJs with the correct UVs, I imported back to ZBrush and started to add detail and subdivide. At this point, it was a process between ZBrush, Photoshop and BodyPaint. I used different ways to add detail, such as using alphas with the DragRect tool in ZBrush (**Fig.05**). Also, in Photoshop, I added some texture layers from photographs (**Fig.06**), and then in ZBrush I modified the geometry based on that texture, masking by intensity (**Fig.07**).

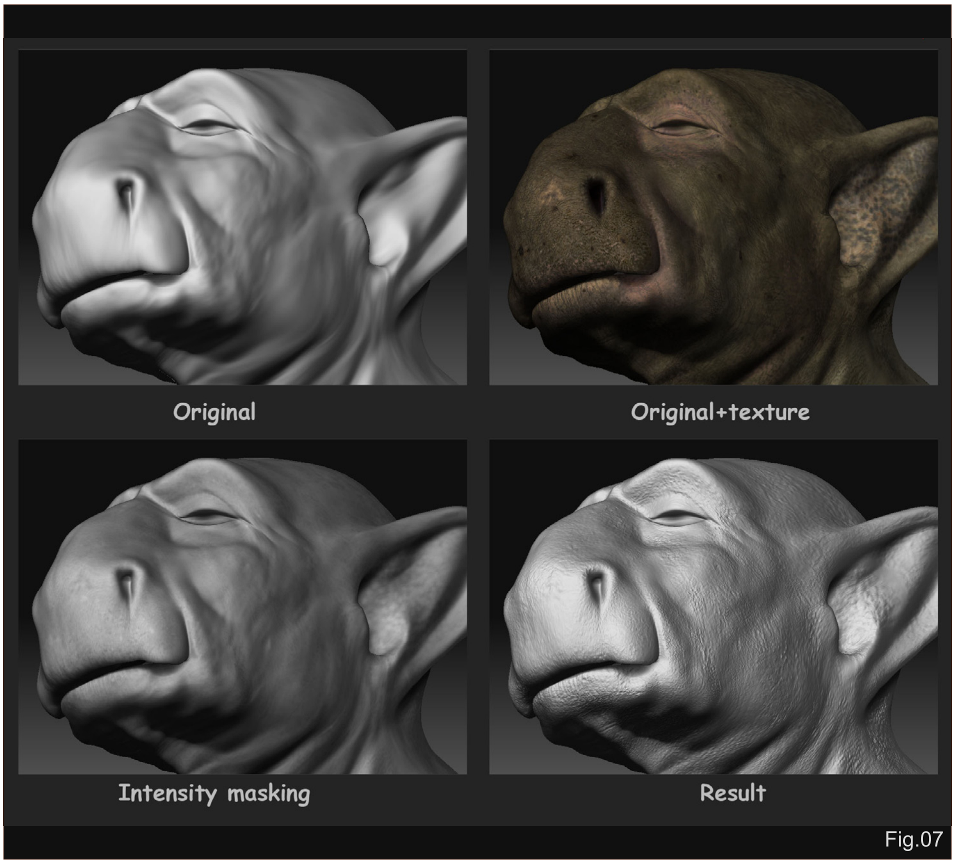


Fig.07

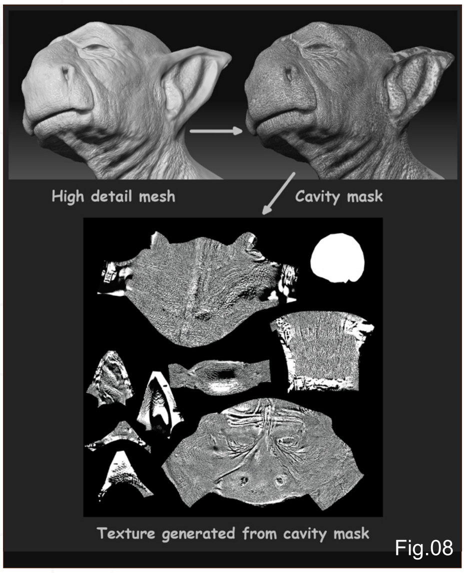


Fig.08

Sometimes I started by generating the displacement map in ZBrush and then used that information to modify the texture, using cavity maps. In Photoshop I used that cavity map texture for masking (**Fig.08**). I also used ZBrush's poly painting feature and BodyPaint to remove the seams, to add detail and project photos. Finally, I created a normal map to apply to the shader in Maya. This is the final aspect of the geometry in ZBrush (**Fig.09**).

For the shirt and the rest of elements, I took photographs of all the possible things that I could use (**Fig.10**).

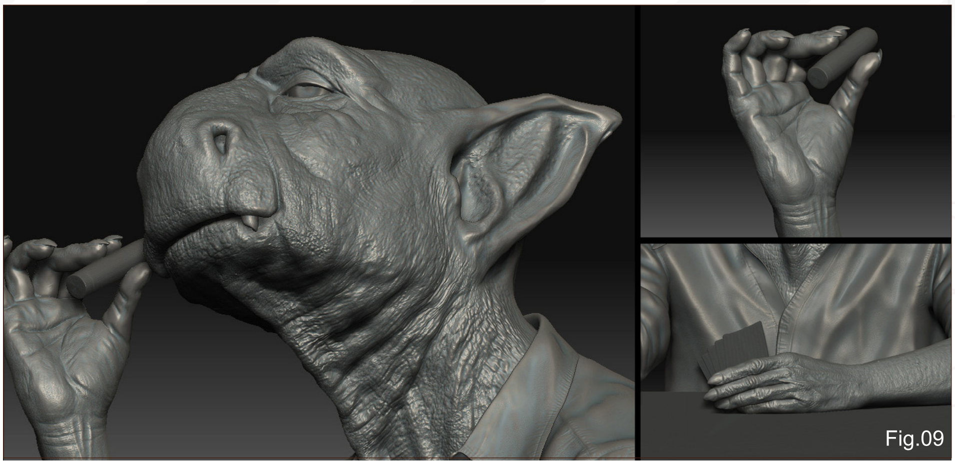


Fig.09

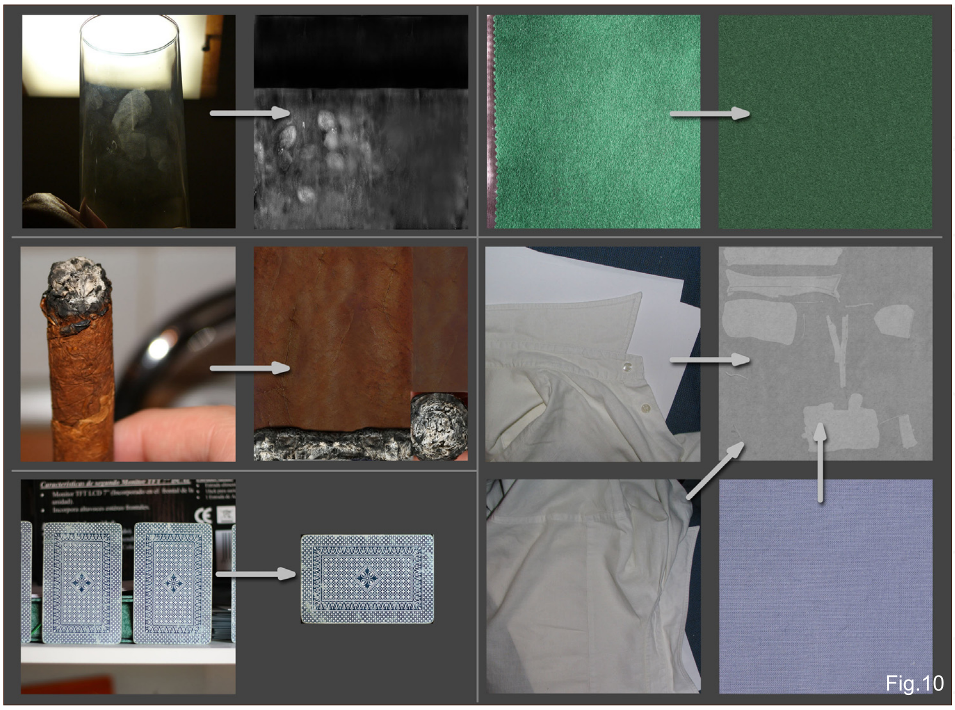


Fig.10

LIGHTING

Back in Maya, I assigned a neutral white shader to start with the lighting tests. I used three lights, as follows (**Fig.11**):

- One light above his head acting as main light (light 1)
- One bluish backlight (light 2) that accentuates the volume of the head
- One bluish fill light coming from the left of the image (light 3) to reduce the dark areas of the character

You can see the effects of this lighting setup in **Fig.12**.

At this point, I decided to add an HDR sphere to add more variation to the lighting. In Photoshop, I merged different HDRs and placed the light sources of those HDRs so that they matched the lighting that I had previously created in Maya. I also duplicated some light sources from the HDR and changed the hue and intensity (**Fig.13**). I then mapped the HDR to an invisible sphere.

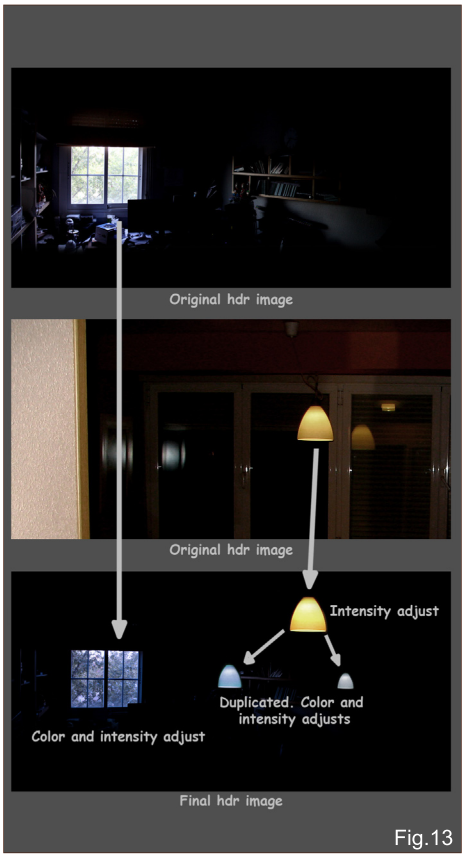


Fig.13

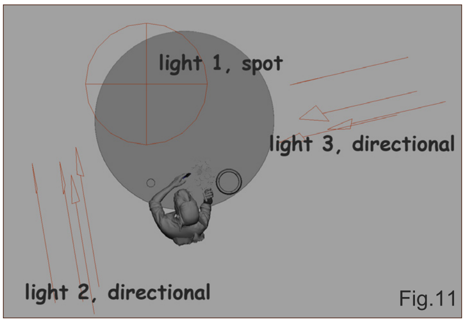


Fig.11

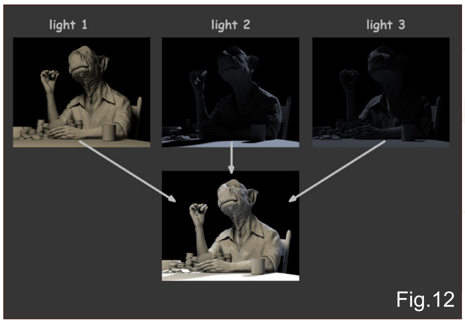


Fig.12

As this FG lighting would be added to the previously created lighting, I reduced the intensity of the initial Maya lights in order to finally get a similar light intensity with the FG sphere just added (**Fig.14**).

SHADING

In this section of the article I'm going to focus on the head and the arms; the other objects simply used "standard" shaders.

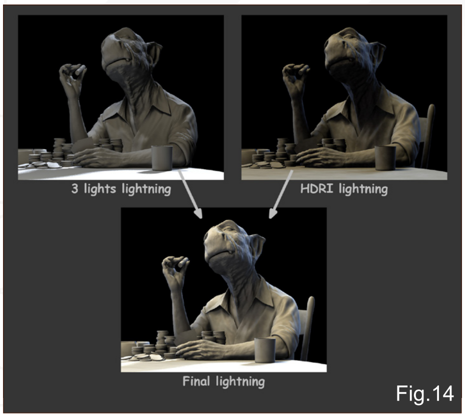


Fig.14

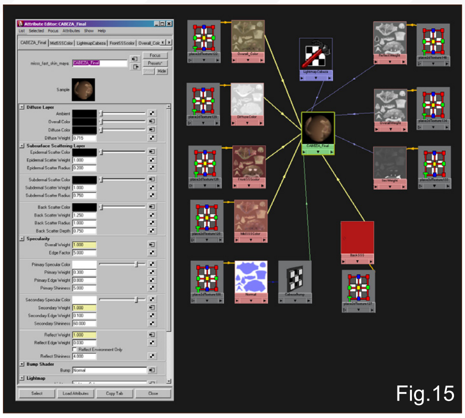


Fig.15

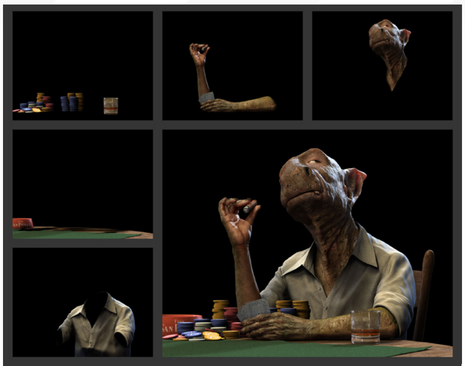


Fig.16

For the head and the arms, I used the Mental Ray shader, “misss fast skin”. First, with the colour base assigned, I adjusted the colours and the weight/radius values. Finally, instead of using a solid colour for all those colour boxes, I duplicated the base texture and made some adjustments in Photoshop to match the colour that I had previously chosen. This added more variety to the shader (**Fig.15**).

The base colour texture was 4096 by 4096 pixels. The other textures were 2048 by 2048 pixels, to reduce texture memory.

RENDER

For the render, I separated the scene into different elements and made a render for each one: head, shirt, hands, cigar, table, chair, poker chips… I prepared a different file for each render layer, adjusting the render attributes to show only the parts that I wanted to see. This helped me to reduce the render time. It would have been impossible to render everything at once. Finally, I merged all that layers in Photoshop (**Fig.16**).

FUR

I also made the fur using some layers/files. I created a file for each fur type, and then rendered with Maya’s renderer, not mental ray. As I was going to composite the fur, I configured the render to show only the fur. The rest of the image would be black. Finally, I merged all these layers in Photoshop using the Screen blending mode (**Fig.17**).

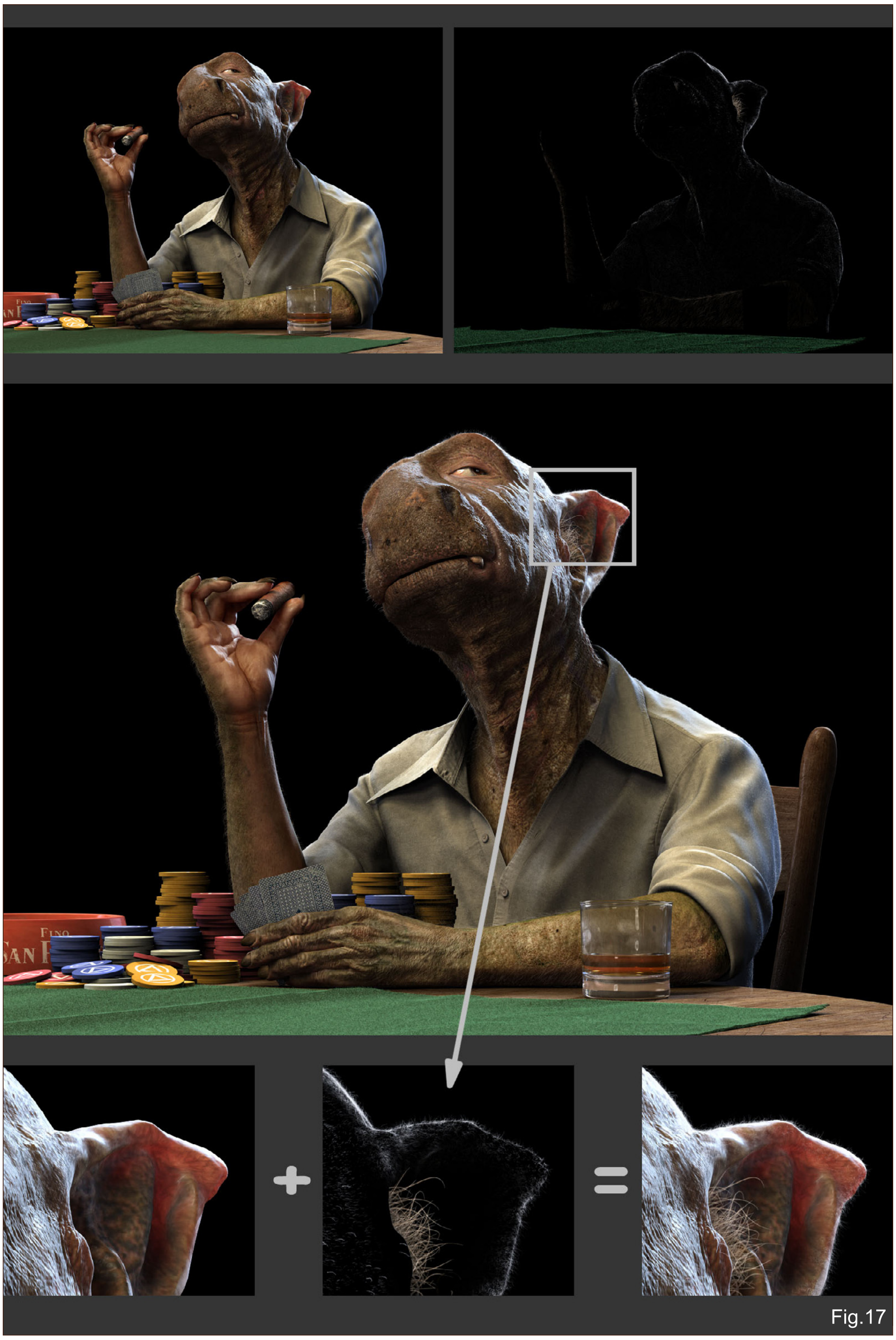


Fig.17

Post-Production

Finally, I added the smoke of the cigar and the background in Photoshop. Both are from photos that I took for this very purpose. And the result is the final image (Fig.18).

Conclusion

In this image I created what I wanted to create. There are perhaps some things that I could have made better (I would change some things), but in general I'm happy with the final result. And of course, I had to stop working on it at some point. To this image I applied many things that I have learned in my years of 3D experience, and from it I learned many things that I hope to be able to take with me into my future projects.

Well, this has been a general overview of the project; if you would like more information about anything covered here, please don't hesitate to contact me. Thanks for reading!

David Moratilla Amago

For more from this artist visit:
http://dmoratilla.cgsociety.org/gallery/
Or contact:
dmoratilla@gmail.com

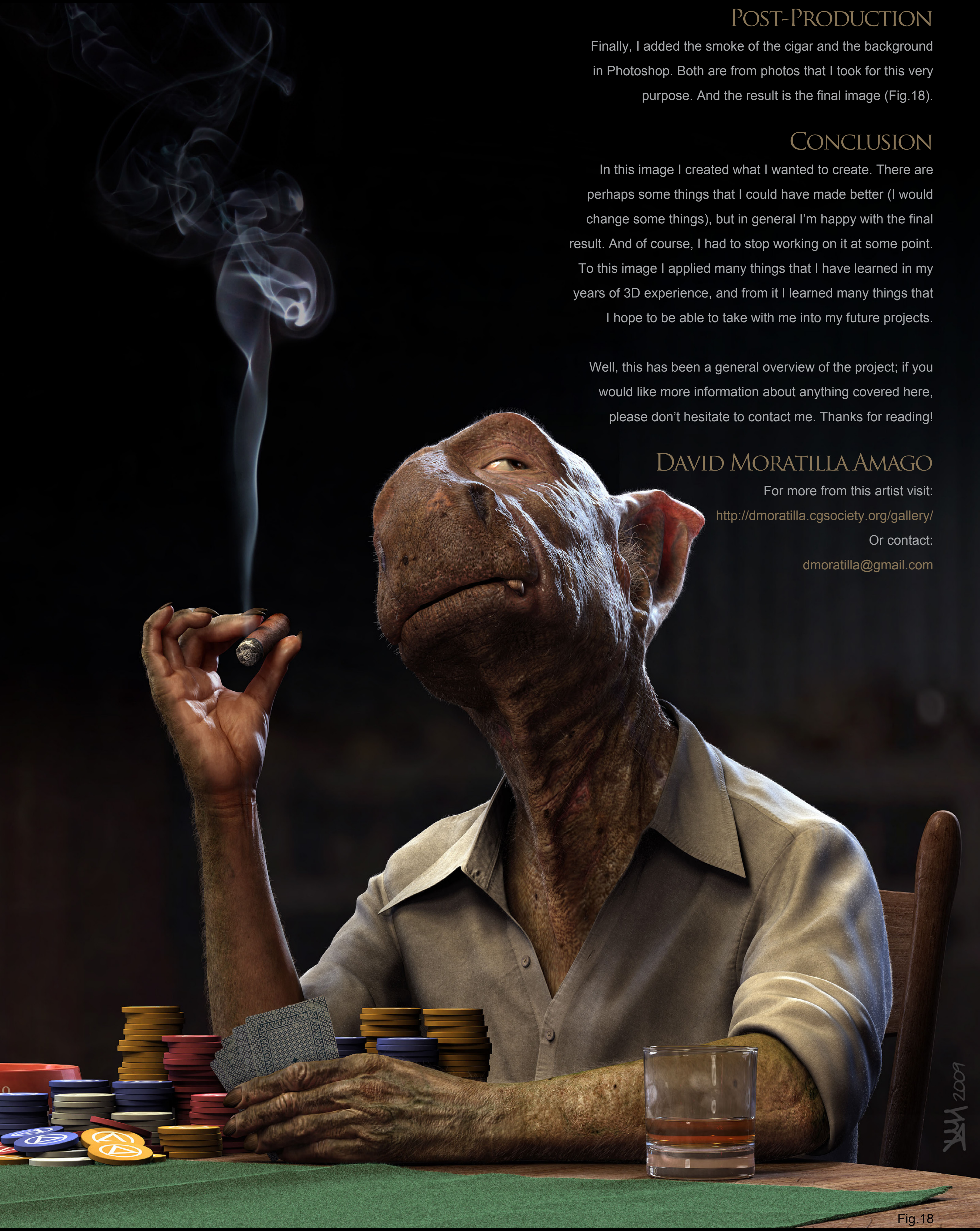
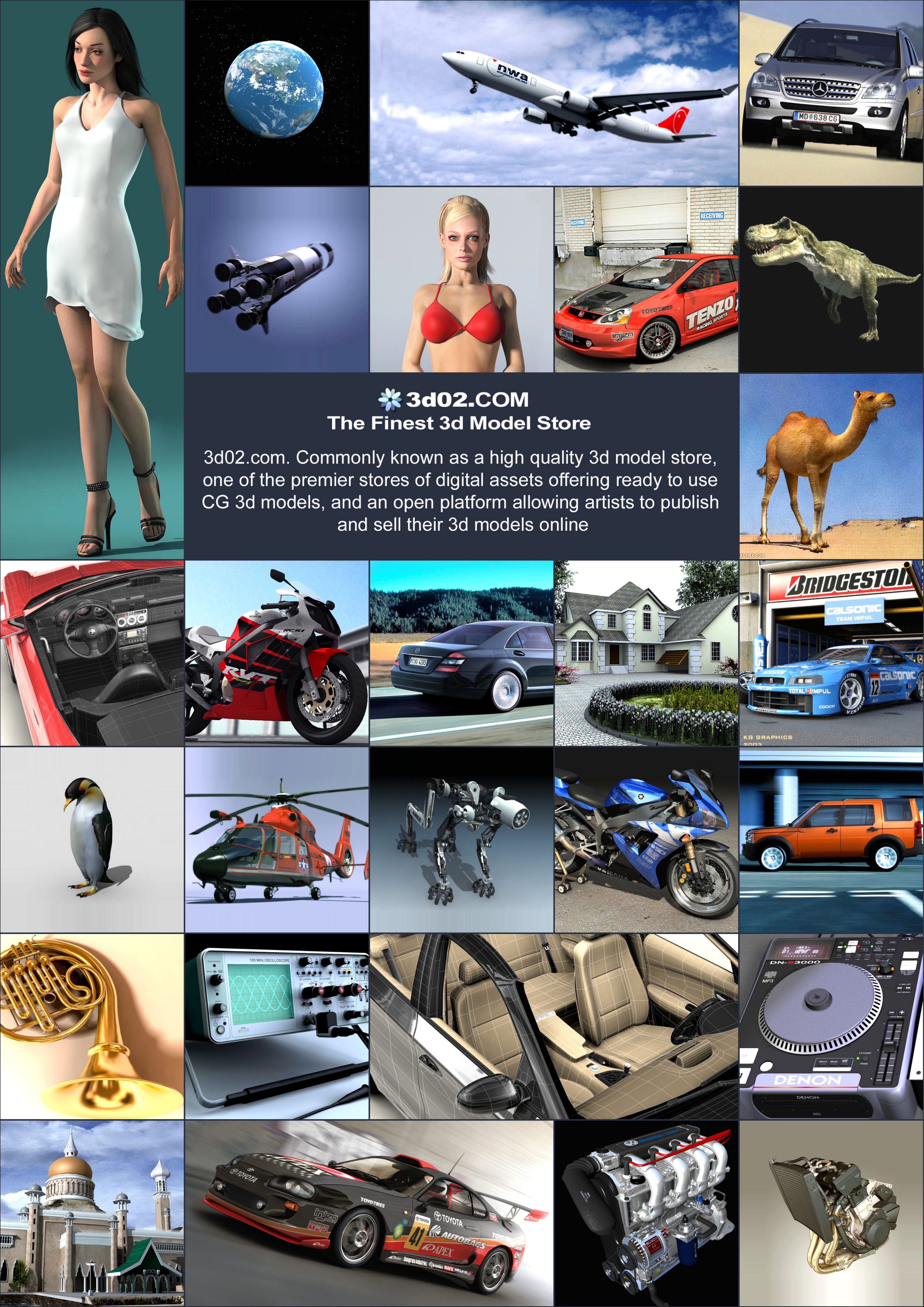


Fig.18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DN-S3000
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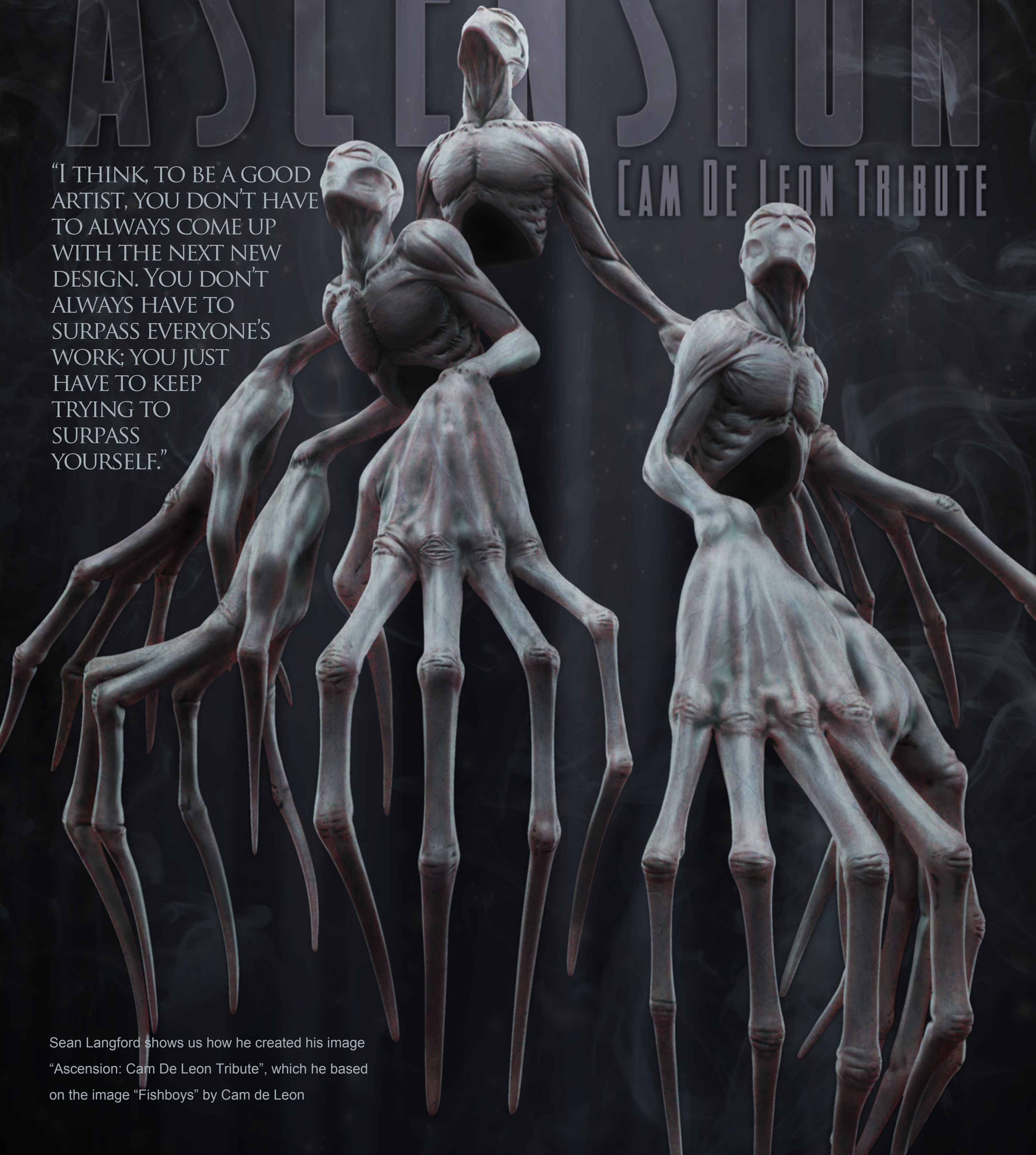
Photography backplate: Joris van Velzen (www.razum.com) cgi & postproduction: www.mainworks.de

Making Of by Sean Langford

ASCENSION

Cam De Leon Tribute



"I THINK, TO BE A GOOD ARTIST, YOU DON'T HAVE TO ALWAYS COME UP WITH THE NEXT NEW DESIGN. YOU DON'T ALWAYS HAVE TO SURPASS EVERYONE'S WORK; YOU JUST HAVE TO KEEP TRYING TO SURPASS YOURSELF."

Sean Langford shows us how he created his image "Ascension: Cam De Leon Tribute", which he based on the image "Fishboys" by Cam de Leon

ASCENSION
CAM DE LEON TRIBUTE

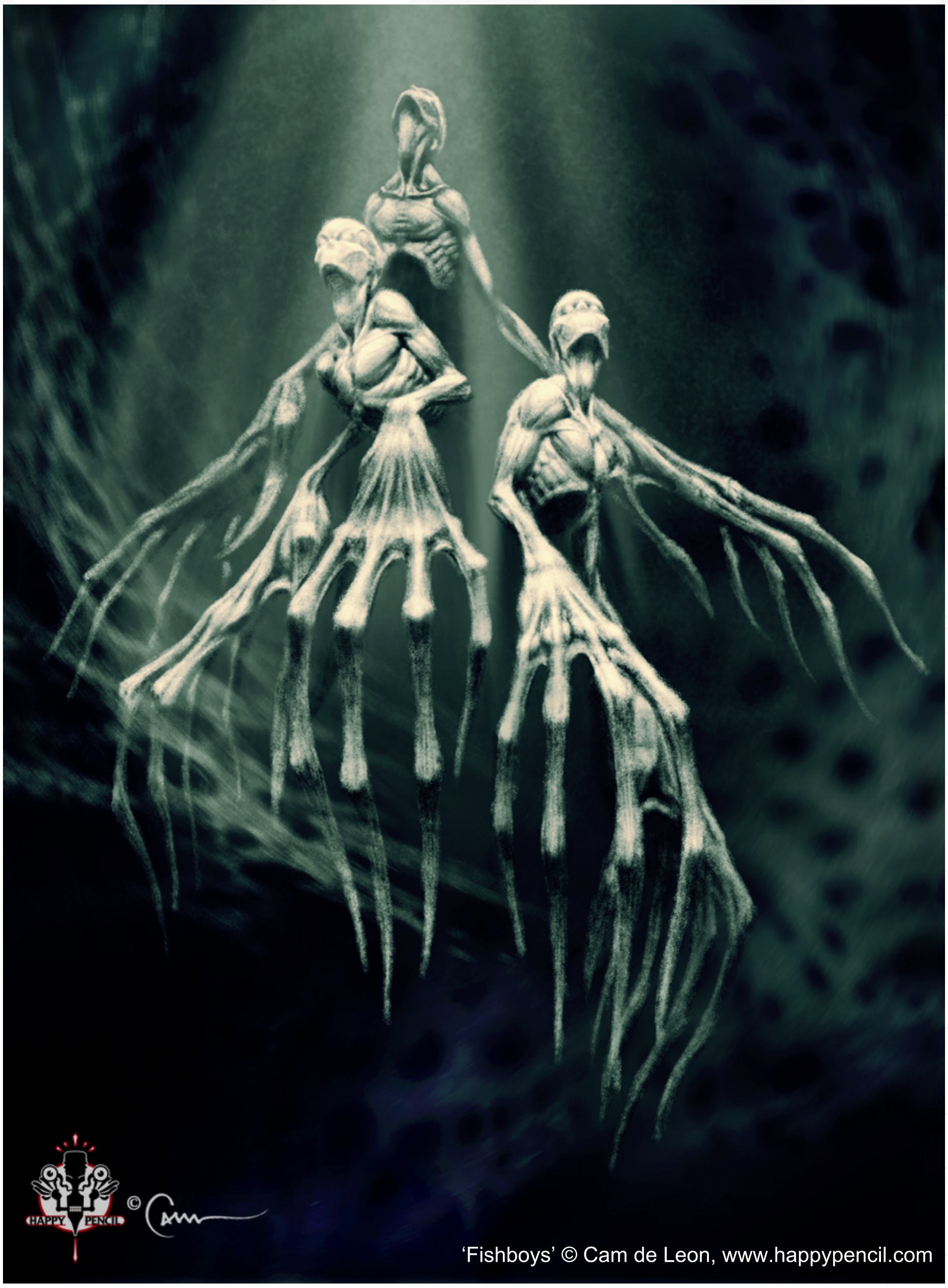
Created In:

3D Studio Max & ZBrush

Introduction

I've always found myself favouring the works of Brom, Giger, and especially Cam De Leon. Cam's works (www.happypencil.com) never fail to amaze and inspire me. Not only do they show a wonderful angle on character design, but they always evoke a series of competing emotions.

I can remember when I decided to do this piece ... It was a slow day at work and I was looking through my stock pile of inspirational images. I have been collecting images from all over the Internet for a while now – photos, concepts, models, all from great artists all over the world. As I passed by Cam's section, I stopped on one image in particular, "Fishboys", which has always been one of my favourites. It's a peculiar piece about three mysterious figures gathered in the rays of an overhead light. Whenever I look at it, I always wonder what they're thinking; where they're going; if they're floating or flying; what the light means. As I began to look into the details, I realised that this could be such a cool piece in 3D ... so I got started.


'Fishboys' © Cam de Leon, www.happypencil.com

Modelling

The image simply consists of three similar figures, so I created a basic mesh for all three in the approximate proportions using 3ds Max. After importing the mesh into ZBrush, I separated it into my favourite Polygroups (**Fig.01**). I find that doing this step first can save a lot of time and hassle throughout the span of the project. For instance, when the arm is separated from the body at the shoulder, no matter how tightly the arm is posed, you can always quickly mask off one from the other.

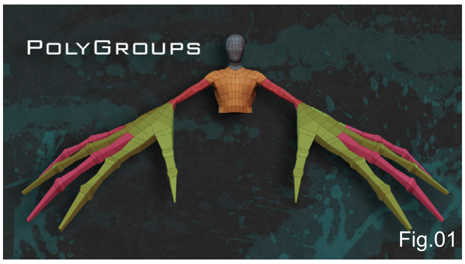


Fig.01

Once the Polygroups were setup, I roughly posed a mesh for each of the three characters. Now, instead of working on each figure as a separate tool, I appended all three as SubTools in the same tool. This allowed me to refine their pose and placement by being able to directly compare them as a whole to the original piece. This wasn't a project about each figure's details, but more a study of them as a whole and how they interacted with each other. This meant it was much more important to get the base of the group, as a whole, ready before moving on to the sculpting.

Sculpting

Before I began the actual sculpting portion, I took a minute to sit down and lay out a plan. This may seem kind of silly for such simple characters, but it actually cut my working time to a third of what it would have been. First of all

I decided to start with the top-most character. Due to the fact that his pose was so much more neutral than the others this made the details more likely to work with the other poses.

For the actual sculpting, I started with the mesh divided twice. This gave me just enough mesh to start working in the shape without getting too deep into the details too early. I mostly used the Inflat and Standard brushes for the first pass, bulging out the shapes and main muscle forms. Then the largest part of the sculpting was done using the Clay brush. I really like the way it builds up in a type of layering fashion and I defiantly recommend you trying it with different focal shift settings – I prefer to use it set to a really negative value. Once the shape was really well defined, the final details were worked out using Fatmiri's Standard 2 brush (www.fatmiri.com/gpage4.html) to carve out creases and wrinkles; and the Clay Tubes brush to give the muscle fibre texture to the skin (**Fig.02**).

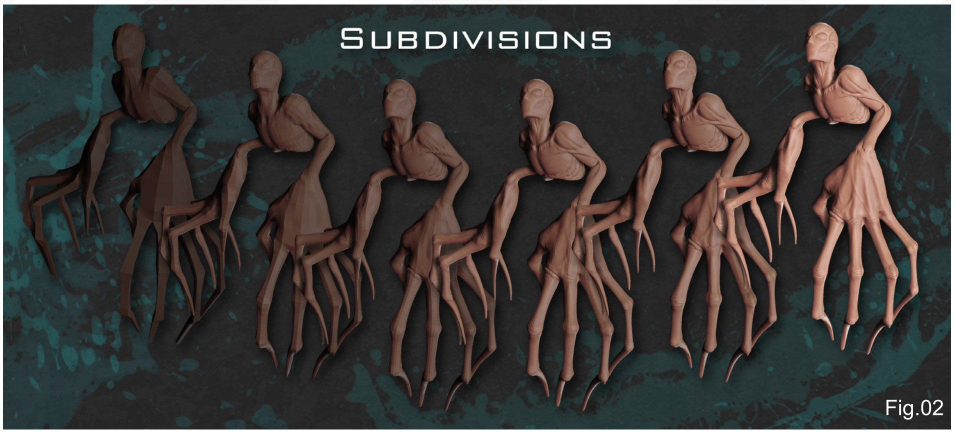


Fig.02

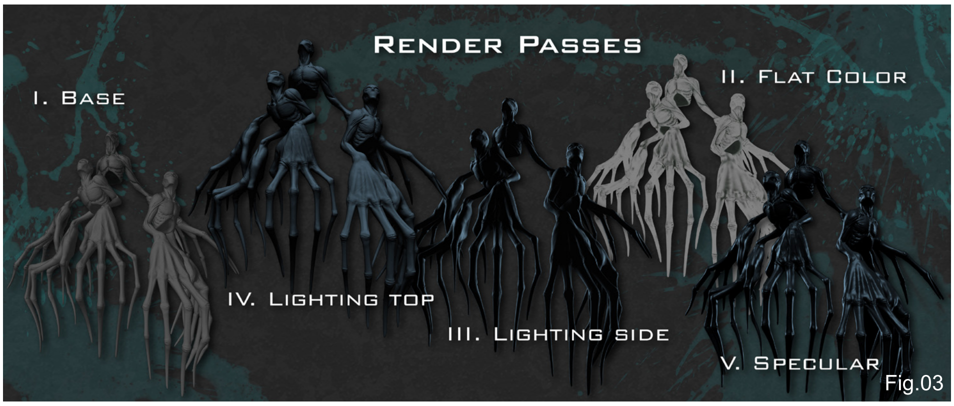


Fig.03

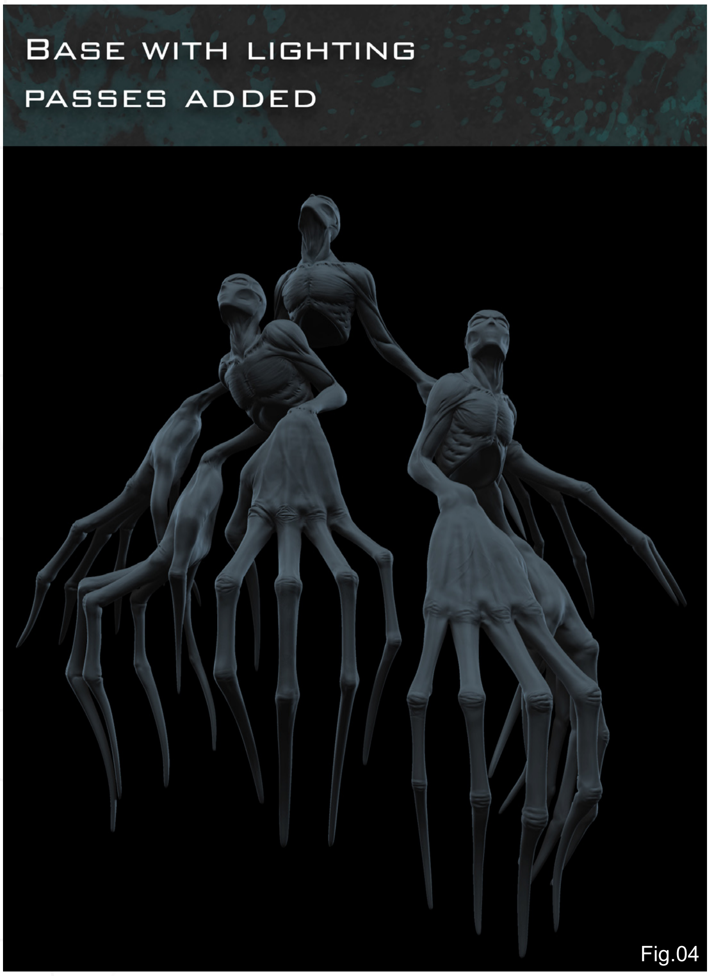


Fig.04

After the original base meshes were posed, I exported each of them out at their lowest subdivision. Once I finished the first figure, I was able to go back down to the lowest subdivision and import one of the other posed meshes. Because they were all started from the same base mesh and had the same number of verts; I could import the posed mesh and simply step back up to higher resolution while keeping all the details. Each pose was unique and required a little more finessing to get all the details to flow and work correctly. Needless to say, this saved me a lot of time.

TEXTURING

Texturing only really consisted of a quick poly painting pass on all three figures. I didn't actually try to paint in any details or colour, but rather just tried to put emphasis on the cavities and darker areas. This was really for more of an occlusion type pass, rather than the actual details. ZBrush's Mask by Cavity option gave me a quick way to paint most of the details I wanted. By selecting it, I could just use the Fill Object button under Colour to instantly fill all the cavities with colour.

RENDERING

All the lighting and rendering was done inside ZBrush. Before this project, I really didn't have any experience with lighting in ZBrush. Though it's not as powerful or advanced as systems like V-Ray, I found that ZBrush's lighting system worked really well for a simple lighting setup. The advantages of not having to export out high-res meshes or displacement maps, and how easy it is to set up the lights, can make ZBrush's lights a great choice for simple still images. Some materials in ZBrush have the lighting information built in. That is great for sculpting, but probably won't work for final images. Choosing the Basic Material will allow you to use any lighting setup you can create.

For this image, I only used three lights: one above and one at each side. By using a simple black material on a black background, I was able to render out the lights in their own pass that could be "screened" on in compositing. Besides the lighting passes, I also rendered out a base, flat colour, and specular pass (**Fig.03**). Each of these was rendered over a black background and half-sized. By making the document size twice the size that you actually want, and then zooming out to half size (Zoom > AAHalf), you are able to smooth out the anti-aliased edges.

COMPOSITING

The base pass was a simple grey material with standard lighting; this just gave me something to start compositing over. Next I added both the top and side lighting passes with the Screen blending mode in Photoshop (**Fig.04**). To fake a sub-surface look, I combined several different images of marble and granite (basically anything with lots of variation) in different blending modes until I came up with my sub-dermal layer (**Fig.05**). By layering this over the base, I could very lightly paint it back into the appropriate areas with a mask (**Fig.06**). I mostly added it along the edges and wherever the figure would be thinner. The poly-painted, flat-colour pass was then multiplied on top to bring out the details in the model.

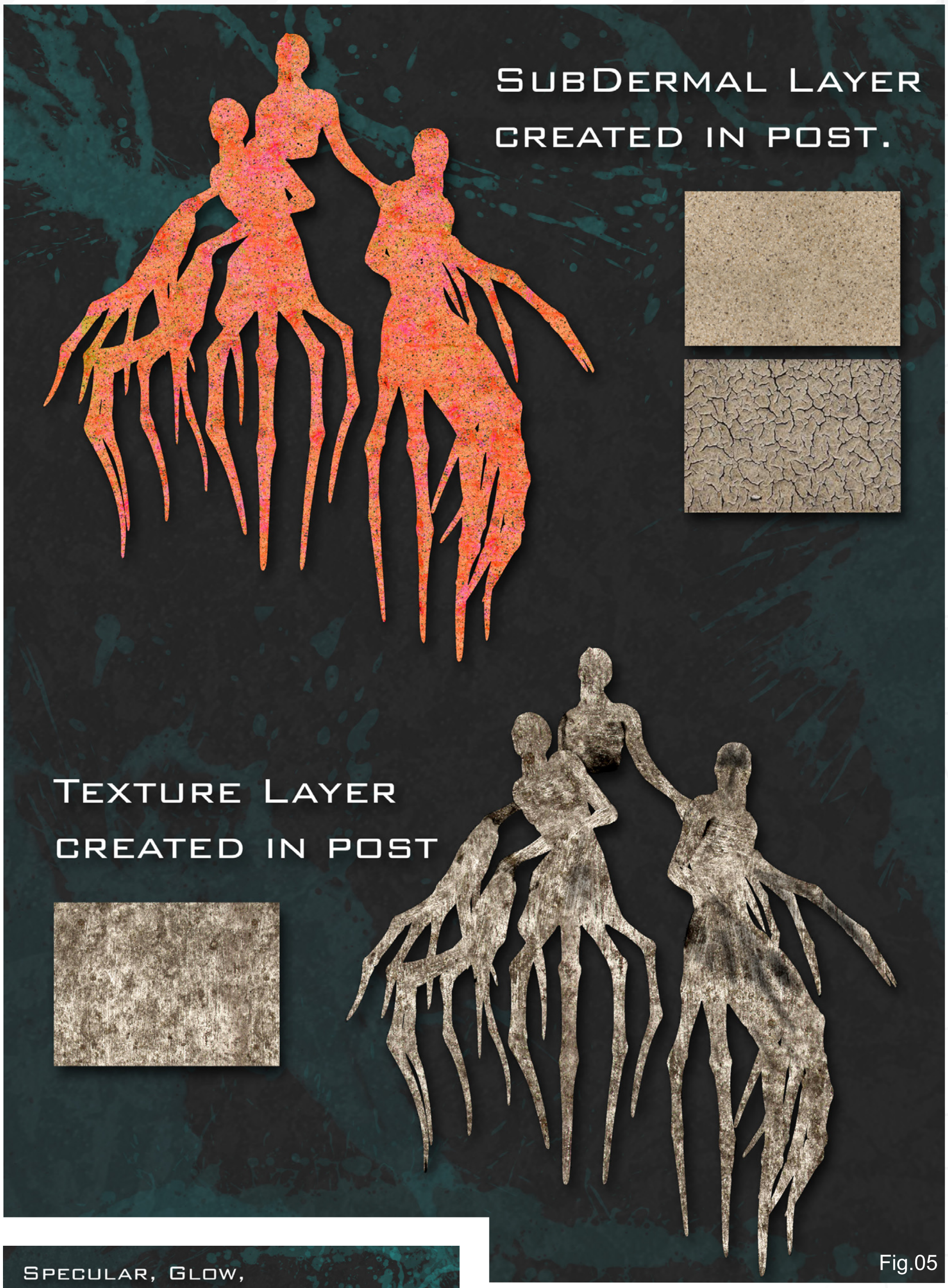


Fig.05

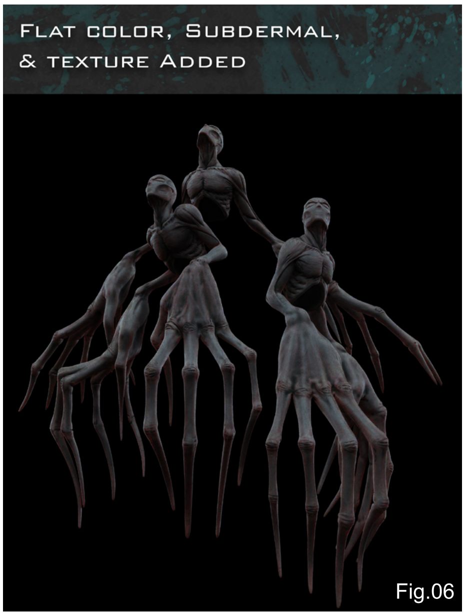


Fig.06

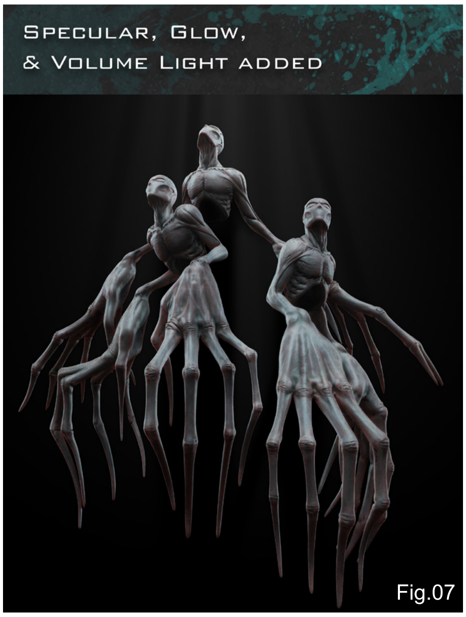


Fig.07

Next I created another fake pass, similar to the sub-dermal layer. To give the skin a little more texture, I took several more images of concrete and put together a texture layer (see **Fig.05**). The important thing to remember about using this technique is to make sure any grain in your texture images is flowing the right way. If you look at the arms in the texture layer, you can see how I turned the images to match the change in the arm's direction. Once the texture pass was added, I darkened some strategic areas to give a bit more depth to the image.

Once the specular layer was screened on, I painted in the volume light and added another blurred specular layer that was set to Overlay and turned way down (**Fig.07**). This helped give the figures a bit of a glow. A simple gradient background and some strategic shadows finished off the main part of the composite (**Fig.08**).

For the final touches, I took an image of ink in water (**Fig.09**) and lightly screened it over the background. I didn't want to make the ink a part of the figures, but really added it to reflect the environment of Cam's original work ... more of just a faint echo than an actual element of the image. I also made a simple cloud of blurry spots, some bigger than others, which makes for a nice dust pass (see **Fig.09**) when screened on very lightly. This gave the final touch that tied everything together and also gave a much needed sense of depth (**Fig.10**).

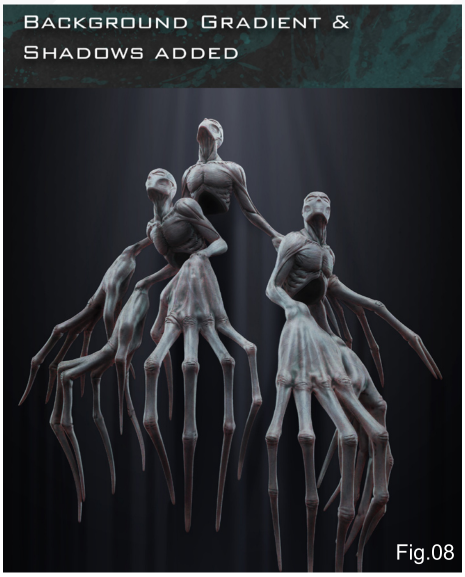


Fig.08

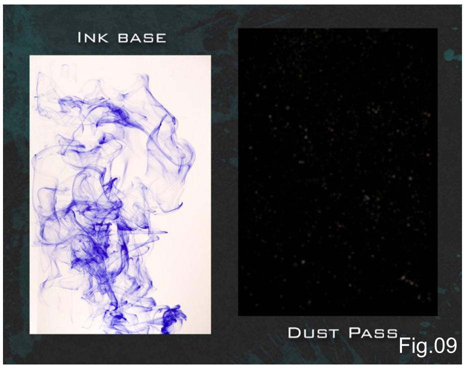


Fig.09

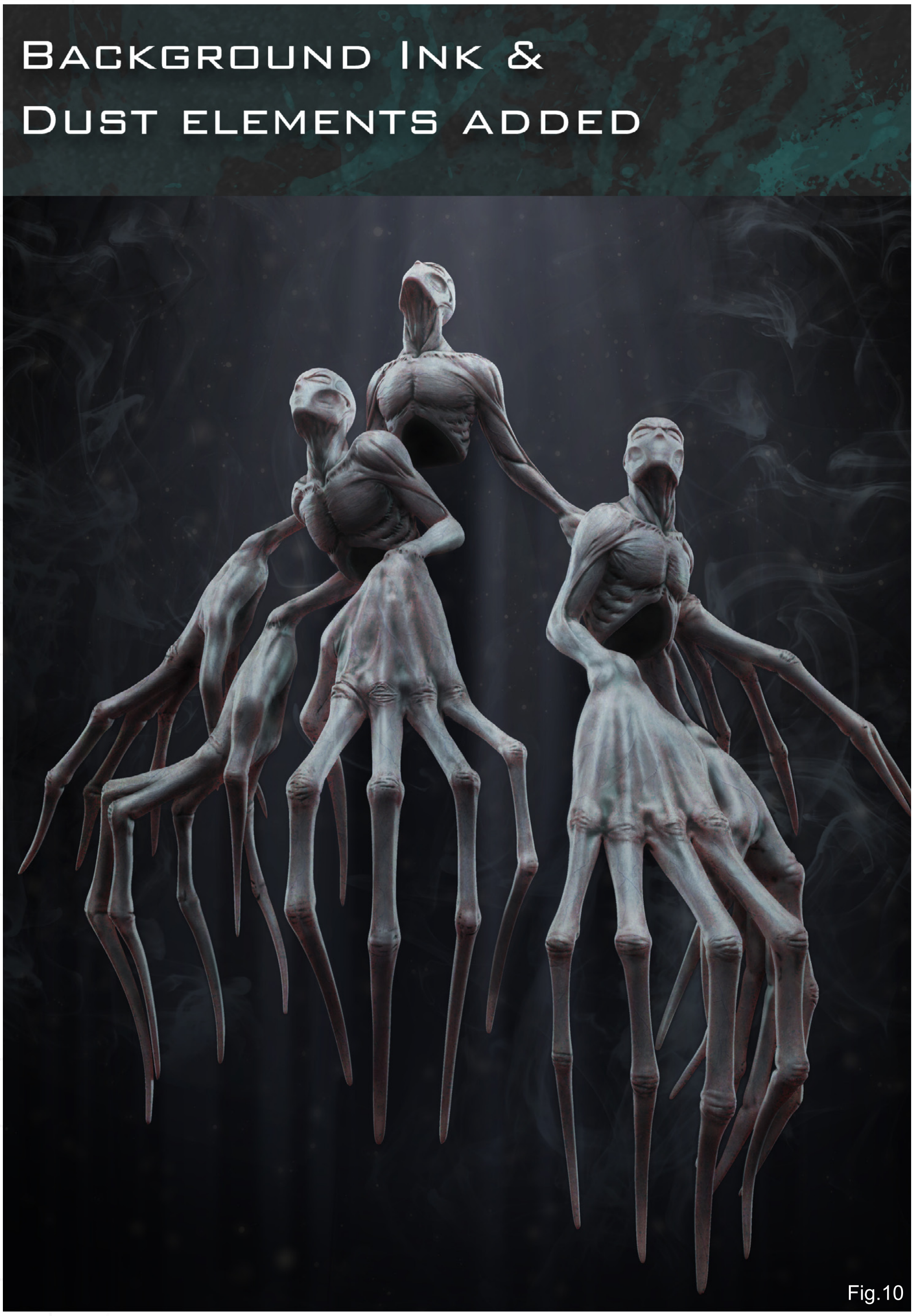


Fig.10

CONCLUSION

I know not everyone will like my work. I know that it may be that nobody ever likes anything I do. But that is not how I judge if a piece is successful. I finished it; I had fun; I tried something different and I learned something new ... so in my book, it is an awesome success. I think, to be a good artist, you don't have to always come up with the next new design. You don't always have to surpass everyone's work; you just have to keep trying to surpass yourself. I did not set out to shake the art community to its knees with this piece, I simply wanted to improve upon myself ... and great artists like Cam de Leon will always inspire me to keep pushing forward.

Sean Langford

For more from this artist visit:

http://www.seanlangford.blogspot.com

Or contact:

slangford@GreenGrassStudios.com

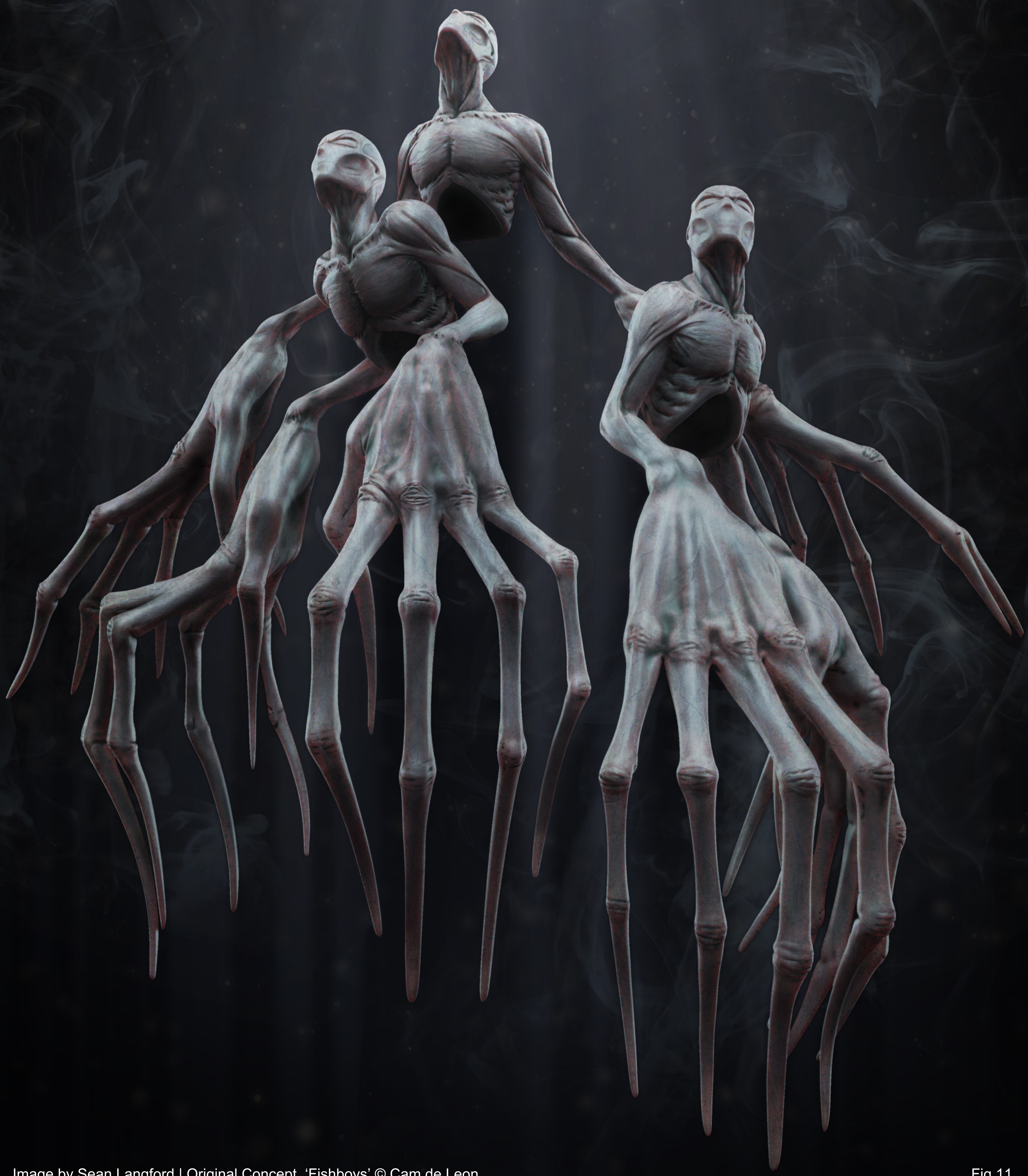


Image by Sean Langford | Original Concept, ‘Fishboys’ © Cam de Leon

Fig.11

DIGITAL ART MASTERS
VOLUME 3

With the release of 3DTotal's book,
Digital Art Masters: Volume 3,
we have some exclusive chapters for you...

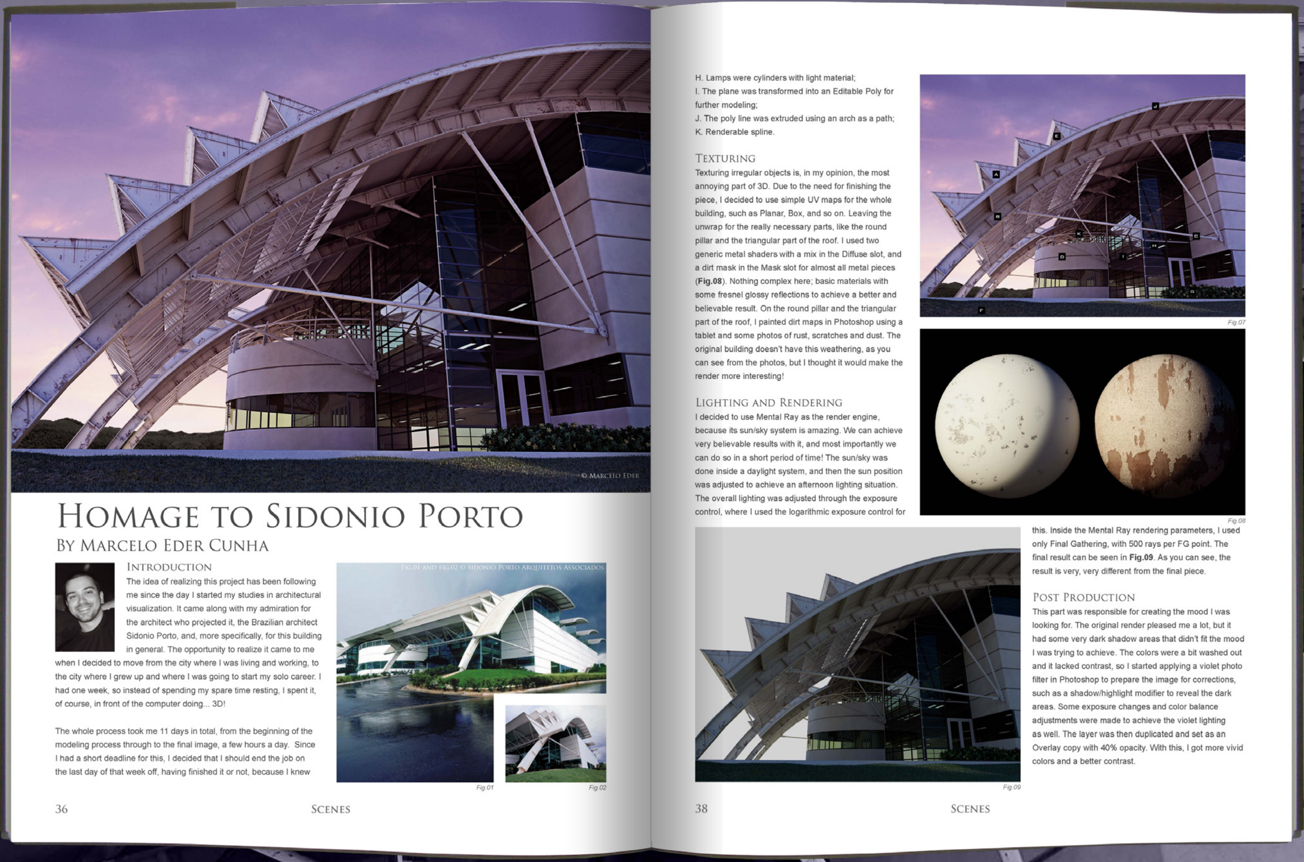
This book is more than just an artwork book. Not only does it feature full-colour, full-page images, but each artist has given a detailed description, in their own words, of the creation process behind each piece of published artwork. And they've done it especially for this book!

This month we feature:

"Homage to Sidonio Porto"

by Marcelo Eder Cunha

The following shots of the “Homage To Sidonio Porto” book pages are featured here in full-resolution and can be read by zooming in...



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Homage to Sidonio Porto

By Marcelo Eder Cunha

Introduction

The idea of realizing this project has been following me since the day I started my studies in architectural visualization. It came along with my admiration for the architect who projected it, the Brazilian architect Sidonio Porto, and, more specifically, for this building in general. The opportunity to realize it came to me when I decided to move from the city where I was living and working, to the city where I grew up and where I was going to start my solo career. I had one week, so instead of spending my spare time resting, I spent it, of course, in front of the computer doing... 3D!

The whole process took me 11 days in total, from the beginning of the modeling process through to the final image, a few hours a day. Since I had a short deadline for this, I decided that I should end the job on the last day of that week off, having finished it or not, because I knew

Fig.01 and Fig.02 © Sidonio Porto Arquitetos Associados

Fig.01

Fig.02

H. Lamps were cylinders with light material;

I. The plane was transformed into an Editable Poly for further modeling;

J. The poly line was extruded using an arch as a path;

K. Renderable spline.

Texturing

Texturing irregular objects is, in my opinion, the most annoying part of 3D. Due to the need for finishing the piece, I decided to use simple UV maps for the whole building, such as Planar, Box, and so on. Leaving the unwrap for the really necessary parts, like the round pillar and the triangular part of the roof. I used two generic metal shaders with a mix in the Diffuse slot, and a dirt mask in the Mask slot for almost all metal pieces (**Fig.08**). Nothing complex here; basic materials with some fresnel glossy reflections to achieve a better and believable result. On the round pillar and the triangular part of the roof, I painted dirt maps in Photoshop using a tablet and some photos of rust, scratches and dust. The original building doesn’t have this weathering, as you can see from the photos, but I thought it would make the render more interesting!

Lighting and Rendering

I decided to use Mental Ray as the render engine, because its sun/sky system is amazing. We can achieve very believable results with it, and most importantly we can do so in a short period of time! The sun/sky was done inside a daylight system, and then the sun position was adjusted to achieve an afternoon lighting situation. The overall lighting was adjusted through the exposure control, where I used the logarithmic exposure control for this. Inside the Mental Ray rendering parameters, I used only Final Gathering, with 500 rays per FG point. The final result can be seen in **Fig.09**. As you can see, the result is very, very different from the final piece.

Fig.07

Fig.08

Fig.09

Post Production

This part was responsible for creating the mood I was looking for. The original render pleased me a lot, but it had some very dark shadow areas that didn’t fit the mood I was trying to achieve. The colors were a bit washed out and it lacked contrast, so I started applying a violet photo filter in Photoshop to prepare the image for corrections, such as a shadow/highlight modifier to reveal the dark areas. Some exposure changes and color balance adjustments were made to achieve the violet lighting as well. The layer was then duplicated and set as an Overlay copy with 40% opacity. With this, I got more vivid colors and a better contrast.

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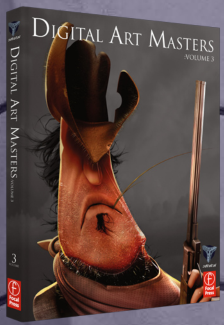

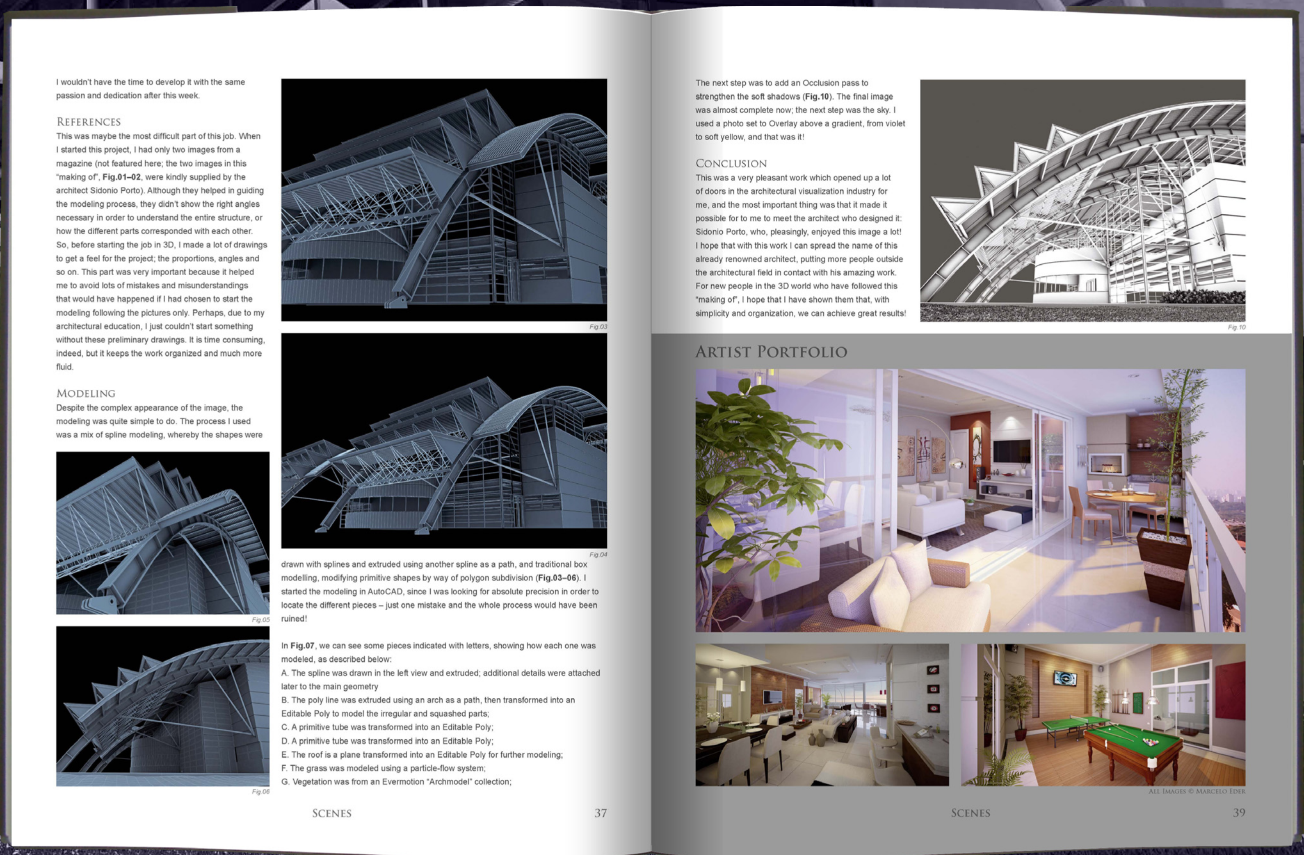

I wouldn’t have the time to develop it with the same passion and dedication after this week.

References

This was maybe the most difficult part of this job. When I started this project, I had only two images from a magazine (not featured here; the two images in this “making of”, **Fig.01–02**, were kindly supplied by the architect Sidonio Porto). Although they helped in guiding the modeling process, they didn’t show the right angles necessary in order to understand the entire structure, or how the different parts corresponded with each other. So, before starting the job in 3D, I made a lot of drawings to get a feel for the project; the proportions, angles and so on. This part was very important because it helped me to avoid lots of mistakes and misunderstandings that would have happened if I had chosen to start the modeling following the pictures only. Perhaps, due to my architectural education, I just couldn’t start something without these preliminary drawings. It is time consuming, indeed, but it keeps the work organized and much more fluid.

Modeling

Despite the complex appearance of the image, the modeling was quite simple to do. The process I used was a mix of spline modeling, whereby the shapes were drawn with splines and extruded using another spline as a path, and traditional box modelling, modifying primitive shapes by way of polygon subdivision (**Fig.03–06**). I started the modeling in AutoCAD, since I was looking for absolute precision in order to locate the different pieces – just one mistake and the whole process would have been ruined!

Fig.03

Fig.04

Fig.05

Fig.06

In **Fig.07**, we can see some pieces indicated with letters, showing how each one was modeled, as described below:

A. The spline was drawn in the left view and extruded; additional details were attached later to the main geometry

B. The poly line was extruded using an arch as a path, then transformed into an Editable Poly to model the irregular and squashed parts;

C. A primitive tube was transformed into an Editable Poly;

D. A primitive tube was transformed into an Editable Poly;

E. The roof is a plane transformed into an Editable Poly for further modeling;

F. The grass was modeled using a particle-flow system;

G. Vegetation was from an Evermotion “Archmodel” collection;

The next step was to add an Occlusion pass to strengthen the soft shadows (**Fig.10**). The final image was almost complete now; the next step was the sky. I used a photo set to Overlay above a gradient, from violet to soft yellow, and that was it!

Conclusion

This was a very pleasant work which opened up a lot of doors in the architectural visualization industry for me, and the most important thing was that it made it possible for to me to meet the architect who designed it: Sidonio Porto, who, pleasingly, enjoyed this image a lot! I hope that with this work I can spread the name of this already renowned architect, putting more people outside the architectural field in contact with his amazing work. For new people in the 3D world who have followed this “making of”, I hope that I have shown them that, with simplicity and organization, we can achieve great results!

Fig.10

Artist Portfolio

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next month

3DC

Here is what's in next months issue of 3dcreative

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Weiye Yin
Tomáš Král

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CONTACT INFORMATION

http://www.3dtotal.com
http://www.3dcreativemag.com
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Editor & Content Manager > Lynette Clee
lynette@3dtotal.com
Lead Designer > Chris Perrins
chrisp@3dtotal.com
Marketing > Jo Hargreaves
jo@3dtotal.com

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Gothic Church

Interior Creation

This series will provide an overview of the principal techniques used to create a gothic interior based upon a concept painting, along with a tutorial on the process of sculpting a gargoyle character in ZBrush. Key methods covering modelling, texturing, lighting and rendering will be outlined over the course of the series and culminate in a chapter on post production and how to composite numerous render passes into a final image.

The schedule is as follows:

PART 1: This tutorial will outline some of the prominent approaches to building the church interior. We will cover some of the key methods and modifiers responsible for creating the scene and core geometry.

PART 2: Will focus on the creation of the gargoyle which will be mounted on one of the columns. This tutorial will orientate around ZBrush and its powerful sculpting tools and show how a detailed model can evolve from simple ZSpheres.

PART 3: This part will detail the texturing phase of the series and deal with mapping and unwrapping key areas of geometry alongside the gargoyle.

PART 4: Lighting and rendering will be the focus in this tutorial. Light rigs and a variety of render passes will be explained in readiness for Part 5; the post production.

PART 5: This, the final part of the series, will show how the various render passes are composited in Photoshop to create a final render. An account of some of Photoshop’s tools will show how versatile this approach can be and show the value of multiple passes for post production.

Gothic Church
INTERIOR CREATION
PART 5: FINAL CHAPTER – POST-PRODUCTION IN PHOTOSHOP

Created In:

Photoshop

INTRODUCTION

Rendering into render passes makes it possible to modify tones, colours and certain effects in the rendered image using Photoshop. Usually the most basic passes rendered for an image are as follows (note that the names might be a little different in certain software programs):

- **Final Render or Final Colour:** This pass is the render containing all the final effects, lighting, etc., which we will use as a reference for putting all the passes together

- **Colour or Diffuse Colour Shading:** This contains the colours of the materials in the scene, and the shadows (it can be un-shadowed, though), but it contains no other effects. The diffuse colour pass can be Direct or Indirect, or Total or Un-shadowed; the Diffuse Shading Direct contains the diffuse amount and the raytraced shadows of direct lights as well as the diffuse colours in the scene. Diffuse Shading Indirect besides the colours contains indirect lighting and its diffuse shadows, and the luminous material lighting, too (in case of Global Illumination). Diffuse Shading Total contains direct and indirect lighting and their shadows

- **Specular or Specular Shading:** This contains the specular effects of the materials in the scene caused by the lighting

- **Ambient Occlusion:** This contains the ambient occlusion effect; it displays the areas hidden to the ambient light shaded; It shades the more obscure parts of the models in the scene. Using this pass gives the details more depth

- **Object Glow:** This contains the glow effects in the scene

- **ZDepth or Depth:** This contains the depth map of the scene measured from the camera; we use this pass in Photoshop to create a lens depth of field effect, amongst other things

- **Volumetric:** This contains the volumetric lighting effects

Other available passes can be utilised too, in order to achieve finer effects (e.g. Fog render pass, Global Illumination render pass, Specular Colour render pass, and so on).

MONITOR CALIBRATION

Before starting the work, it's strongly recommended that you calibrate your monitor, if you haven't already, so we'll be able to work at a default setting that eliminates possible colour or tone distortions caused by the monitor being too bright or dark. You can calibrate your CRT monitor using Adobe Gamma Monitor Calibration Utilities (it's automatically installed along with Adobe Photoshop). LCD monitors

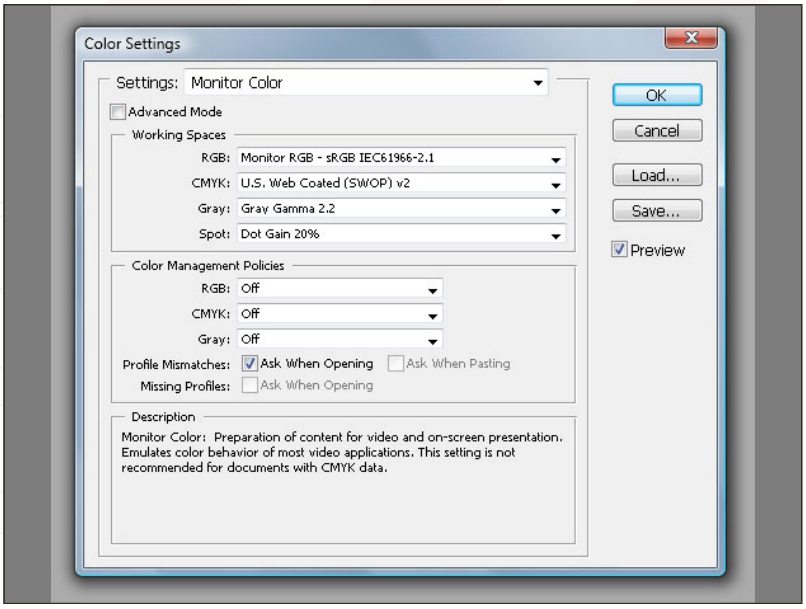


Fig.01

Color Settings

Settings: Monitor Color

☐ Advanced Mode

Working Spaces
RGB: Monitor RGB - sRGB IEC61966-2.1
CMYK: U.S. Web Coated (SWOP) v2
Gray: Gray Gamma 2.2
Spot: Dot Gain 20%

Color Management Policies
RGB: Off
CMYK: Off
Gray: Off
Profile Mismatches: ☑ Ask When Opening ☐ Ask When Pasting
Missing Profiles: ☐ Ask When Opening

Description
Monitor Color: Preparation of content for video and on-screen presentation. Emulates color behavior of most video applications. This setting is not recommended for documents with CMYK data.

can be calibrated using their own calibrator or, if that's unavailable, by setting them to the factory defaults.

Other colour space dependant settings can be found in Photoshop under the Edit/Colour Setting menu option (**Fig.01**). Usually the default setting is ideal for a standard monitor (Settings/Monitor Colour), but if the final image is created for a given technological display, e.g. European Standard CMYK offset printing, then it's recommended to select the most suitable option (e.g.: Settings/Europe Prepress Defaults) so that the visuals will be as similar to the final image as possible.

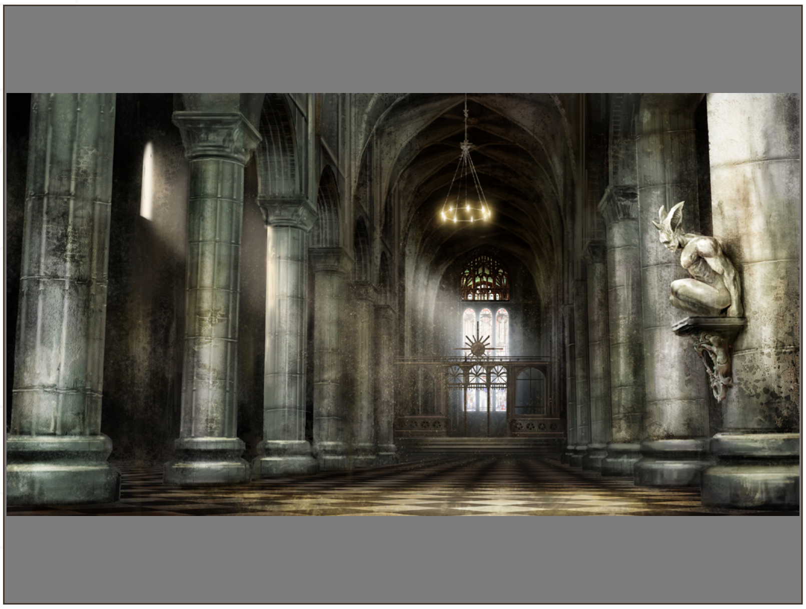


Fig.02

We will now try to put the given render passes from the 3ds Max artist together so that the finished image resembles the concept design as closely as possible (**Fig.02**).

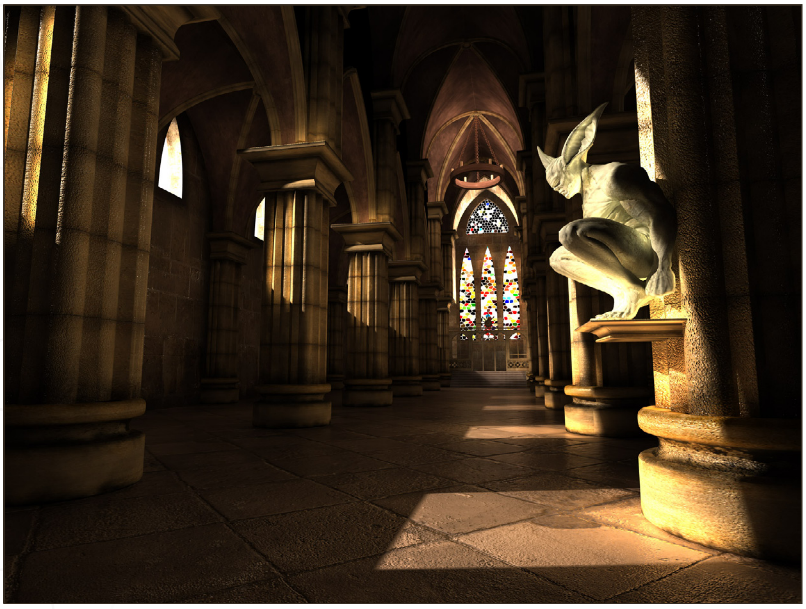


Fig.03

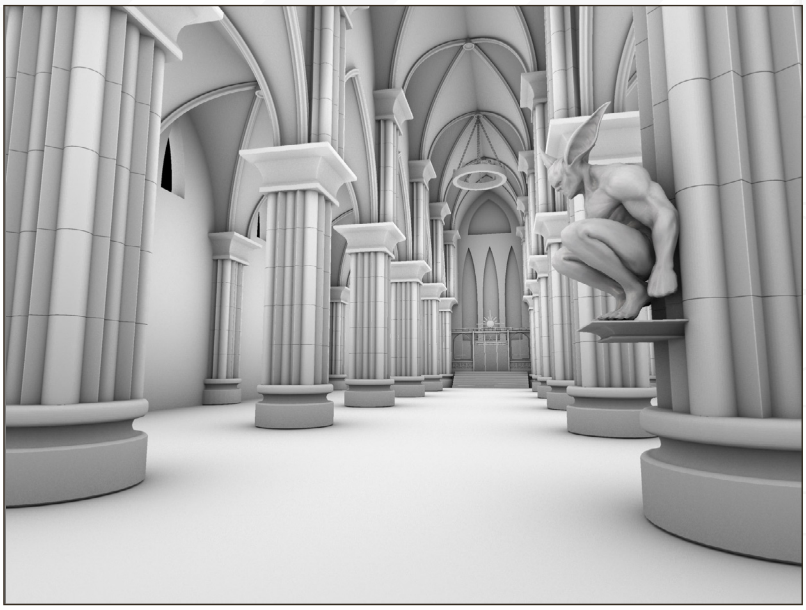
EXISTING PASSES

We have the following passes:

- Colour pass (**Fig.03**)

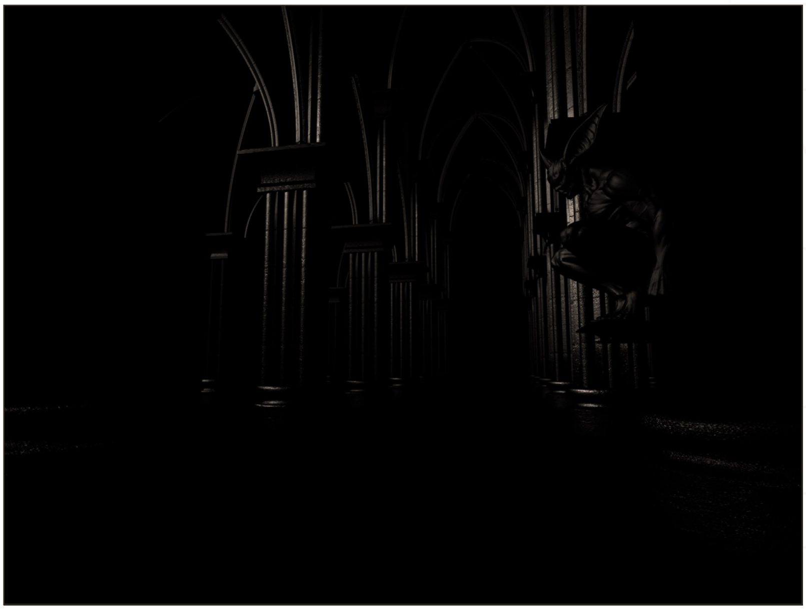
- Ambient Occlusion pass (**Fig.04**)

Fig.04



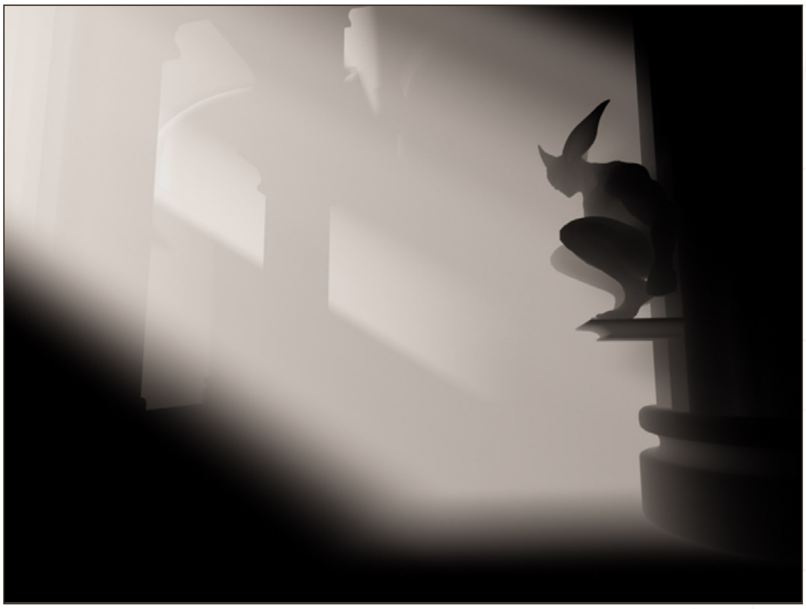
- Specular Pass (**Fig.05**)

Fig.05



- Volumetric Pass (**Fig.06**)

Fig.06



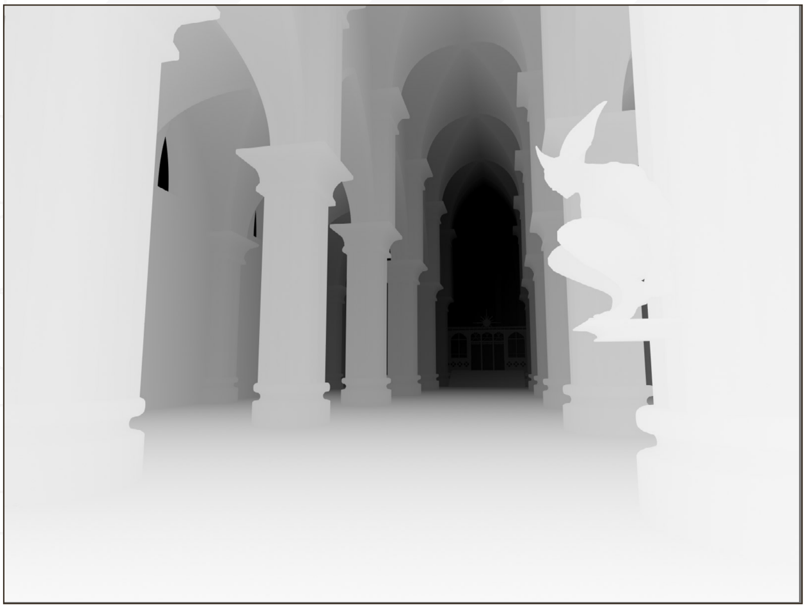
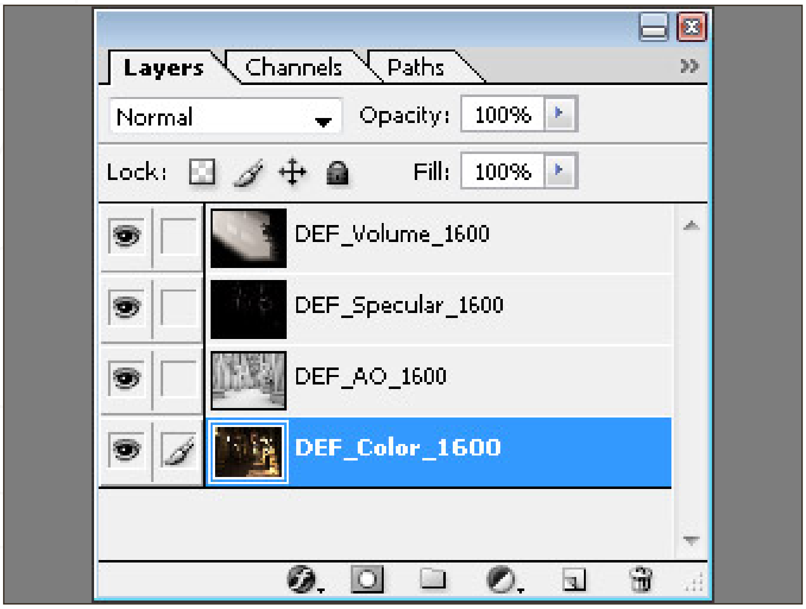


Fig.07

- ZDepth (**Fig.07**)



Normal
Opacity: 100%
Lock:
Fill: 100%
DEF_Volume_1600
DEF_Specular_1600
DEF_AO_1600
DEF_Color_1600

Fig.08

STEP 1: PUTTING ALL THE PASS LAYERS TOGETHER IN A DOCUMENT

First we need to put the render passes together in this order, and with these Layer Blending settings (to set the Blending Mode, choose an option from the scroll down menu on the Layers palette) (**Fig.08**):

- Colour pass (Normal blending)
- Ambient Occlusion pass (Multiply blending)
- Specular pass (Screen blending)
- Volumetric pass (Linear Dodge blending)

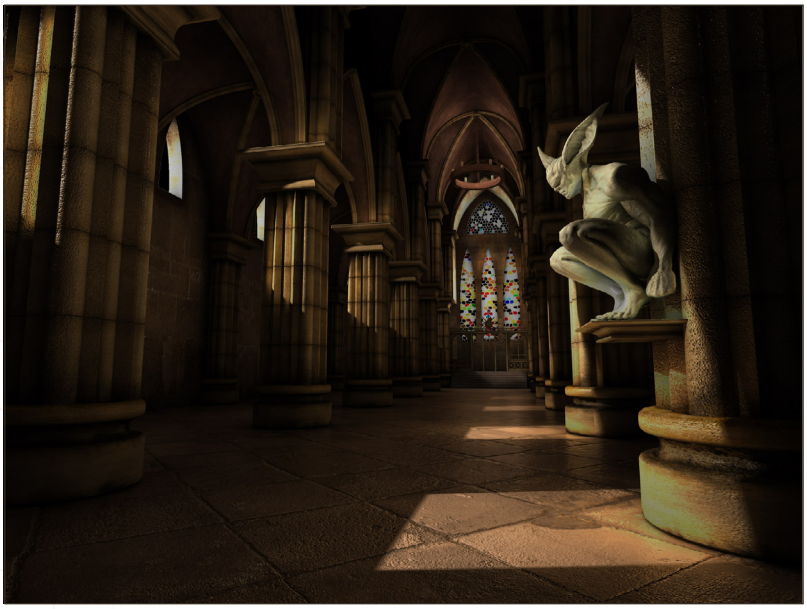


Fig.09

Fig.09 shows the Colour pass with the Ambient Occlusion pass.

Fig.10 shows the Colour pass with the Ambient Occlusion and Specular passes.

Fig.10

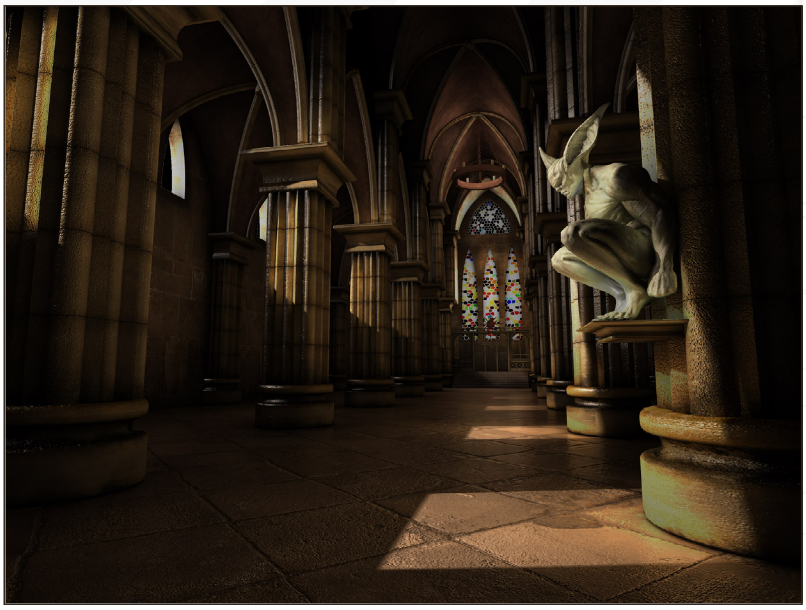
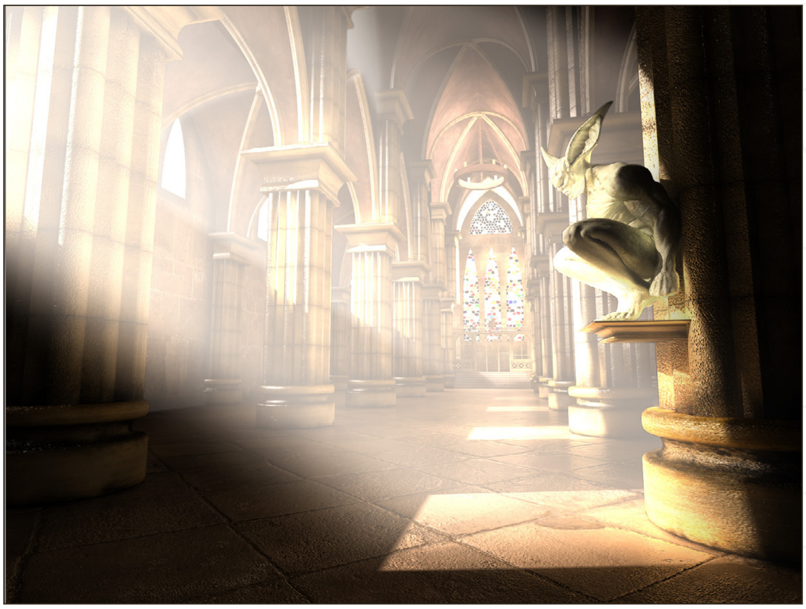


Fig.11 shows the Colour pass with the Ambient Occlusion, Specular and Volumetric passes.

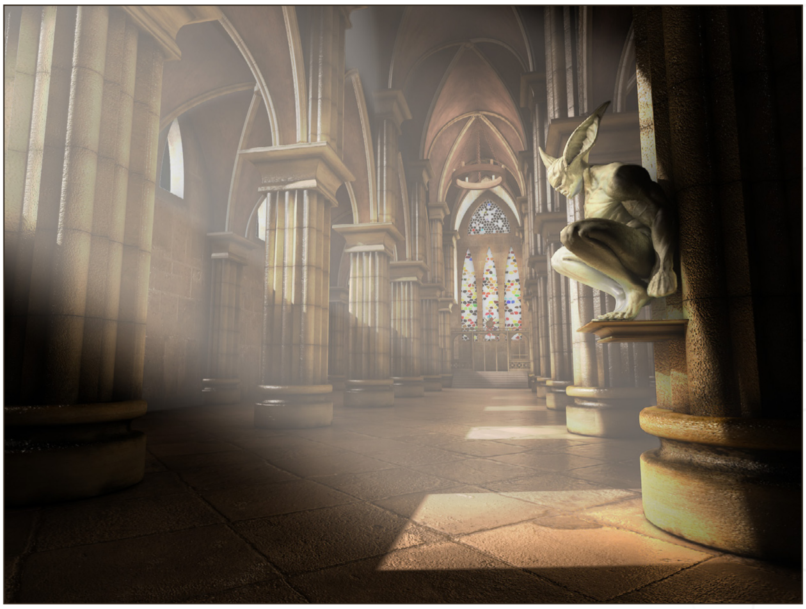
Fig.11



STEP 2: FINE-TUNING

With this picture at the default settings, the volumetric light beams coming in from the windows are far too strong; too cotton-like. This strength can be turned down by adjusting the opacity of the layer containing the Volumetric pass (the Opacity slider can be found on the Layers palette). **Fig.12** shows the opacity of the Volumetric layer set to 62%.

Fig.12



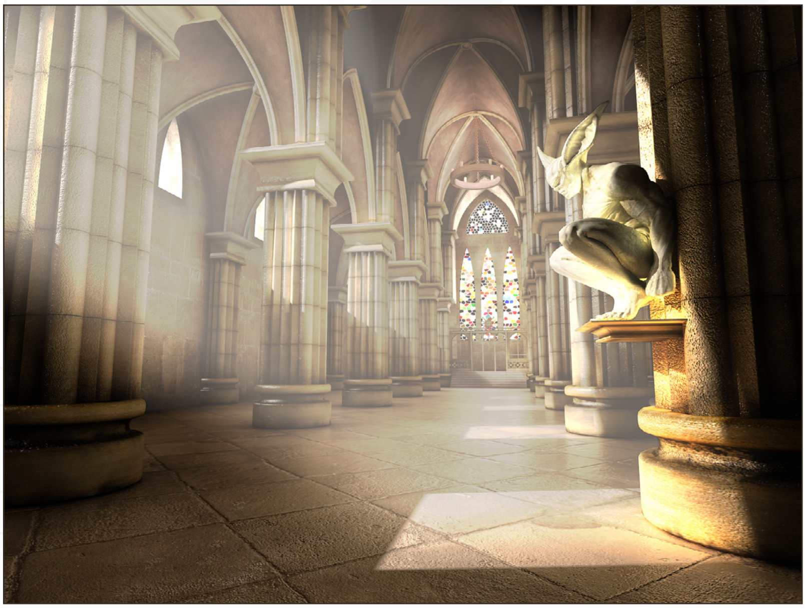


Fig.13

The tones are weak in the dark parts now. This can be corrected by setting the Blending Mode of the Ambient Occlusion layer to Soft Light from Multiply (choose Soft Light from the scroll down menu on the Layers palette). **Fig.13** shows the layer blending mode of the Ambient Occlusion layer set to Soft Light.

Now the different tones are visible in the dark areas, but the bright areas have become too bright; for example the bright tones of the gargoyle are burned. These parts can be corrected with a simple trick. Simply duplicate the Ambient Occlusion layer; set its Blending Mode to Multiply and the opacity to 50%. **Fig.14** shows the image with the Ambient Occlusion layer duplicated and set to Multiply.

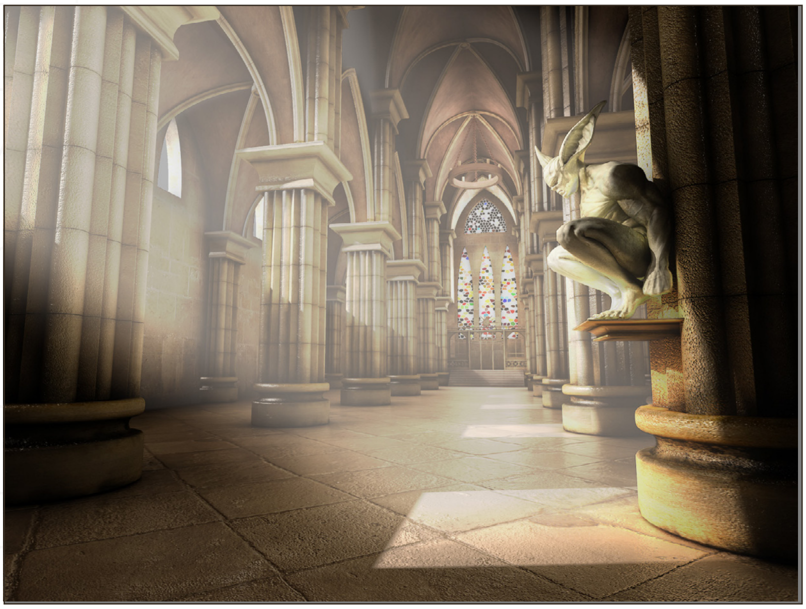
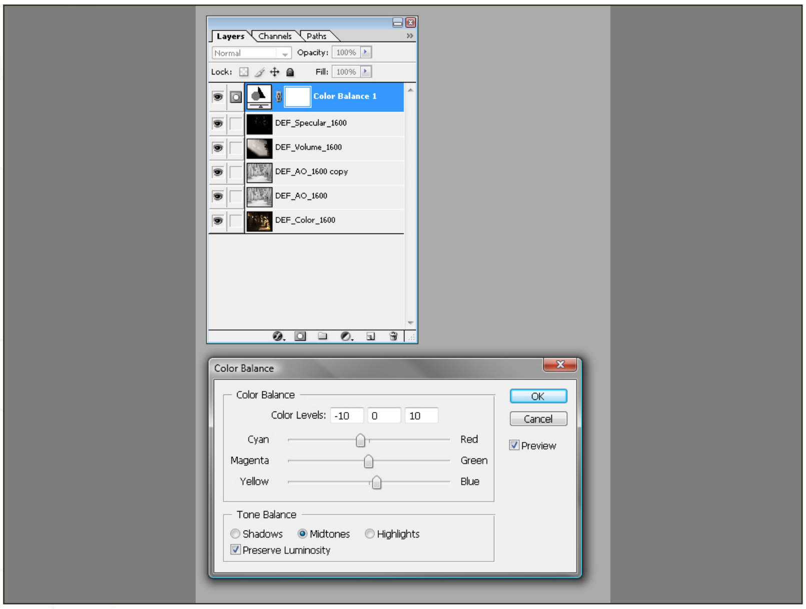


Fig.14

Changing the order of the layers changes the strength and the product of the layers with different blending modes, which we can use to change the effect of the image. For example, changing the order of the Volumetric and the Specular passes causes the Specular effect to become less intense on the dark values, so it fits the image better.

STEP 3: ADJUSTING COLOUR AND DEPTH OF FIELD

After making corrections to ensure the tonal values show on both the dark and light parts of the image, we can now use a Colour Balance adjustment layer to set the colours of the image to those of the original concept art. By applying colder colours to the parts farther from the camera, the feeling of depth can be increased.



Layers: Normal, Opacity: 100%, Fill: 100%

- Color Balance 1
- DEF_Specular_1600
- DEF_Volume_1600
- DEF_AO_1600 copy
- DEF_AO_1600
- DEF_Color_1600

Color Balance

Color Levels: -10 0 10

Tone Balance: ○ Shadows ● Midtones ○ Highlights

☑ Preserve Luminosity

☑ Preview

Fig.15

These tasks can be done using the ZDepth pass as a mask. First, create a new Colour Balance adjustment layer (on the Layers palette, go to the “Create a new fill or adjustment layer” icon), and then set the value of Midtones Colour Levels to -10 Cyan and 10 Blue (**Fig.15**). Select and copy (Ctrl + A, Ctrl + C) the opened ZDepth pass. Select the Colour Balance adjustment layer, turn on the Colour Balance mask on the

Channels palette, and paste the copied ZDepth pass (Ctrl + V). This way, the effect of the Colour Balance adjustment layer appears on the image masked out with the ZDepth pass. But now the Colour Balance adjustment layer affects the parts closer to the camera, so we simply invert the mask (Ctrl + I).

Fig.16 shows the inverted ZDepth map used as a mask for the Colour Balance adjustment layer. The red colour is the colour of the layer mask overlay, which appears when the visibility of the mask is turned on. The Colour Balance adjustment layer affects the image on these parts. **Fig.17** shows the image with the final colour setup.

Fig.16

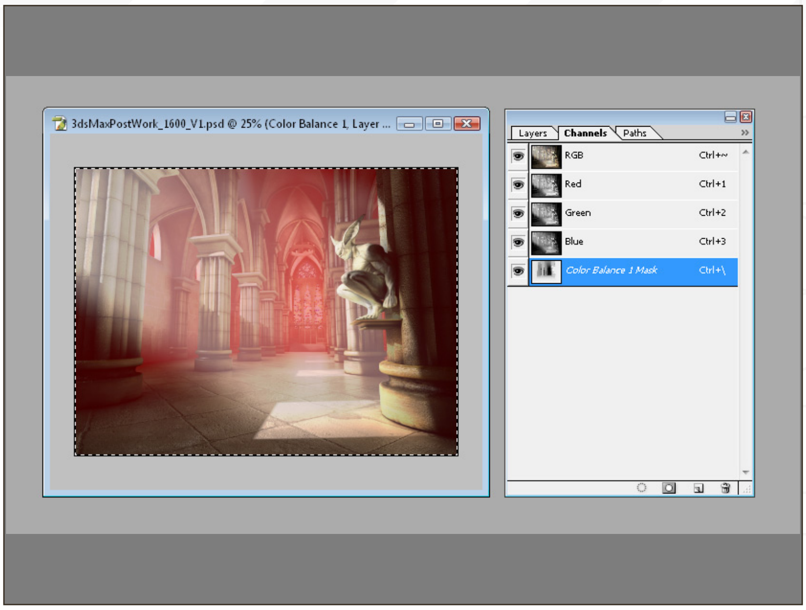
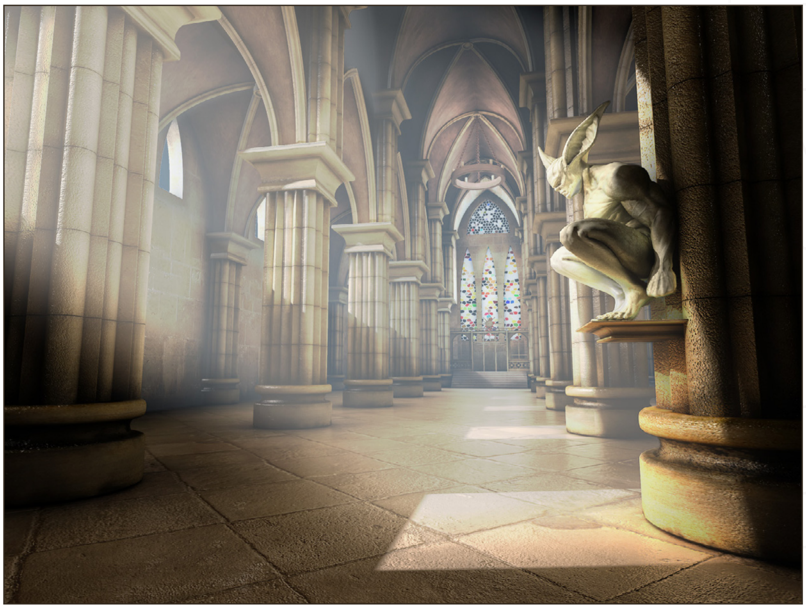

3dsMaxPostWork_1600_V1.psd @ 25% (Color Balance 1, Layer ...
Layers
Channels
Paths
RGB Ctrl+~
Red Ctrl+1
Green Ctrl+2
Blue Ctrl+3
Color Balance 1 Mask Ctrl+\

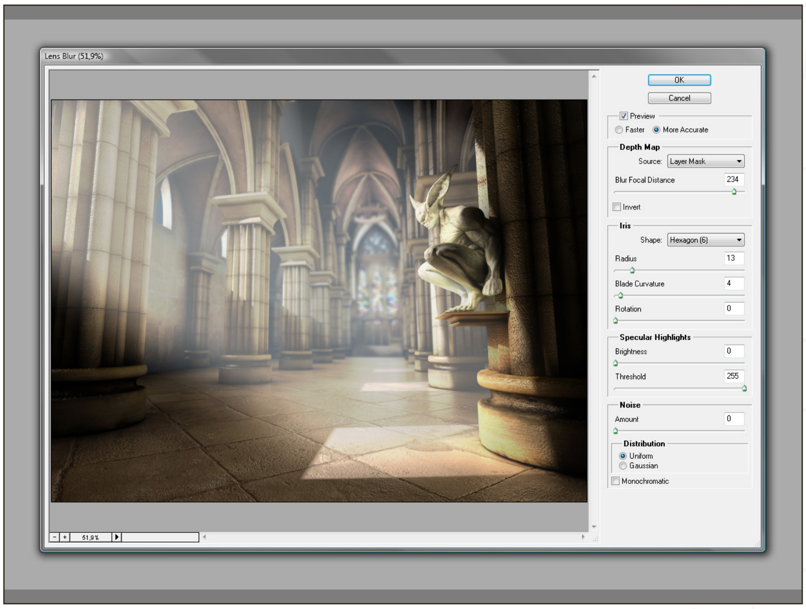
Fig.17



The atmospheric effect can be further strengthened with an additional depth of field effect, also using the ZDepth pass. First, merge all the configured passes into one layer, then create a mask for it (Layers palette > click on the “Add layer mask” icon), and copy the ZDepth pass into it. The blur effect can be achieved using the Photoshop Lens Blur filter (Filter > Blur > Lens Blur).

The dialogue for the Lens Blur filter contains a preview window, where a preview can be seen with the current settings, and a settings panel. The Preview section can be found on this panel, where the preview can be turned on and off, or switched to Faster or More Accurate (**Fig.18**).

Fig.18



☑ Preview
○ Faster ● More Accurate

Depth Map
Source: Layer Mask
Blur Focal Distance 234
☐ Invert

Iris
Shape: Hexagon (6)
Radius 13
Blade Curvature 4
Rotation 0

Specular Highlights
Brightness 0
Threshold 255

Noise
Amount 0
Distribution
● Uniform
○ Gaussian
☐ Monochromatic

Select the ZDepth map (Layer Mask) from the Source scroll-down menu of the Depth Map section; the filter will generate the Lens Blur based on this map. The focal distance can be adjusted either by using the Blur Focal Distance slider or by clicking the part on the preview image onto which we want to focus. In this case, this is the gargoyle. The Iris Shape can be adjusted under the Iris section; use Square shape with Iris Radius with the value of 7, and Blade Curvature and Rotation both with the value of 0.

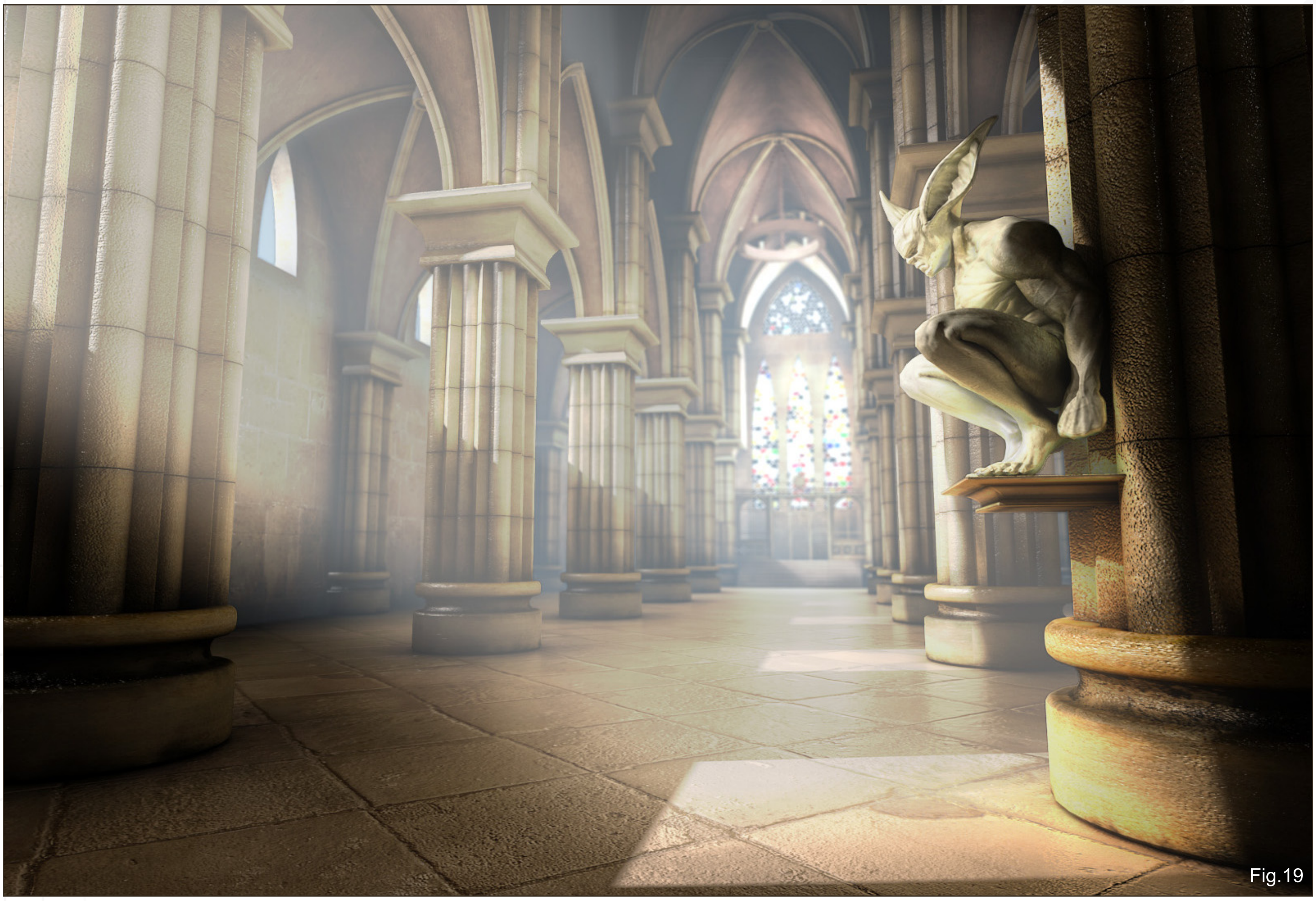


Fig.19

The Brightness and Threshold of the specular highlights of the image can be adjusted under the Specular Highlights section. In this case set Brightness to 7, giving the stained glass window a glowing feel.

The noise the blur effect has can be set up under the Noise options in the Specular Highlights section; leave these at their default values for this task. After using the effect, delete the mask.

In this example, the composition of the image was suitable for a depth of field effect, but this is not always the case. Sometimes using depth of field makes the scene look like a model (**Fig.19**).

TIPS FOR HANDLING LAYERS

- The mask of a masked layer can be easily switched on and off. Just left-click on the mask while holding down the Shift key
- Putting the layers into sets makes them easy to duplicate, so you can always leave a "backup copy" of the arranged layers in the file. This can be useful if you merge a copied set for using lens effects
- A layer or layer set can be easily duplicated by grabbing it on the Layers palette and dragging it down onto the "Create new layer" icon on the bottom of the palette
- A new layer set can be created by clicking the "Create new set" icon, which can be found on the bottom of the palette. You can then simply drag the layers into it. Another option is linking the layers belonging to one set with the currently selected layer to it, and then selecting Layer Set from Linked on the Layer palette

CONCLUSION

The examples show clearly that effects in a scene rendered in multiple passes can be adjusted more easily and finely than in the rendering software itself. The more passes available, the more finely the certain effects can be adjusted; however, it's enough to use only those passes which are sufficient for fine-tuning the effects in the scene.

Originally designed & modelled by:
RICHARD TILBURY

GOTHIC CHURCH
INTERIOR CREATION
PART 5: FINAL CHAPTER – POST-PRODUCTION IN PHOTOSHOP

ZOLTAN KORCSOK
For more from this artist visit:
http://trurl.cgsociety.org/
Or contact:
zoltankorcsok@gmail.com

Eva Wild

Female Characters Creation

Introduction:

The ‘Eva Wild Series’ – Our aim in this series is to provide comprehensive lessons to produce a complete fully rigged, textured and anatomically correct female character. This series fits well into 3 DVDs with 3 separate professional 3ds Max instructors taking you through each if their specialties in very detailed step by step processes making this training suitable for artists of all levels.

Part 1 - Modelling:

- Complete step by step modelling of the Eva Wild character.
- Teaches the importance of studying human anatomy.
- Provides clear diagrams showing muscle flow and bone structure.
- 14 hours of comprehensive training.
- Suitable for artist of all levels.

Part 2 - Texturing, Mapping & Clothing:

- Complete step by step texturing process of the Eva Wild character.
- Modelling and Texturing of Eva Wild garments.
- Lighting the character.
- 4 hours and 47 mins of comprehensive training.
- Suitable for artist of all levels.

Part 3 - Rigging & Animation

- Complete step by step of setting up a fully animatable rig for the Eva Wild character.
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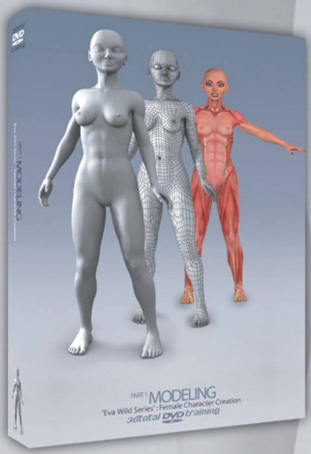
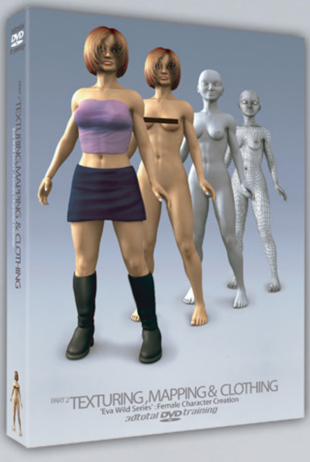
- Creating a simple face morph.
- 7 hours and 43 mins of comprehensive training.
- Suitable for artist of all levels.

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TEXTURING, MAPPING & CLOTHING
PART 2 TEXTURING, MAPPING & CLOTHING
'Eva Wild Series': Female Character Creation
3dtotal DVD training

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Gothic Church

Interior Creation

This series will provide an overview of the principal techniques used to create a gothic interior based upon a concept painting, along with a tutorial on the process of sculpting a gargoyle character in ZBrush. Key methods covering modelling, texturing, lighting and rendering will be outlined over the course of the series and culminate in a chapter on post production and how to composite numerous render passes into a final image.

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Gothic Church
INTERIOR CREATION
PART 5: FINAL CHAPTER – POST-PRODUCTION IN PHOTOSHOP

Created In:

Photoshop

INTRODUCTION

Rendering into render passes makes it possible to modify tones, colours and certain effects in the rendered image using Photoshop. Usually the most basic passes rendered for an image are as follows (note that the names might be a little different in certain software programs):

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- Specular or Specular Shading: This contains the specular effects of the materials in the scene caused by the lighting

- Ambient Occlusion: This contains the ambient occlusion effect; it displays the areas hidden to the ambient light shaded; It shades the more obscure parts of the models in the scene. Using this pass gives the details more depth

- Object Glow: This contains the glow effects in the scene

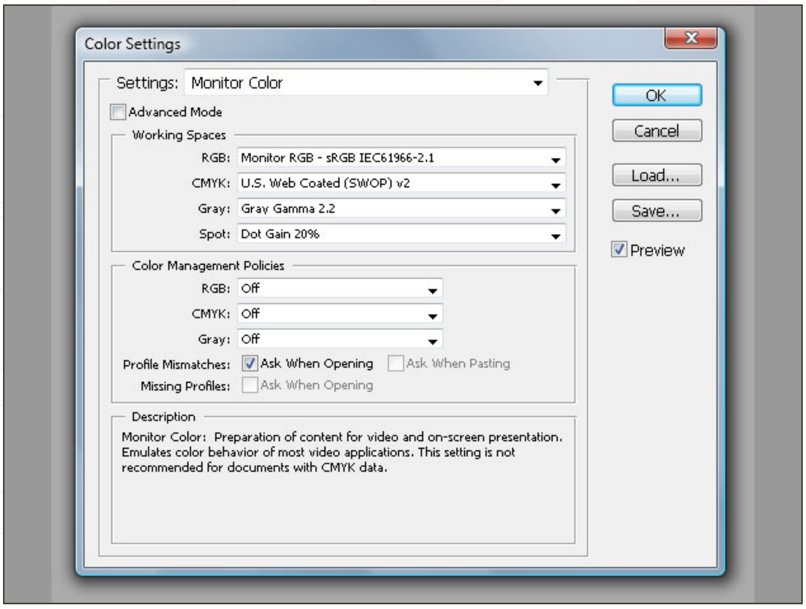
- ZDepth or Depth: This contains the depth map of the scene measured from the camera; we use this pass in Photoshop to create a lens depth of field effect, amongst other things

- Volumetric: This contains the volumetric lighting effects

Other available passes can be utilised too, in order to achieve finer effects (e.g. Fog render pass, Global Illumination render pass, Specular Colour render pass, and so on).

MONITOR CALIBRATION

Before starting the work, it's strongly recommended that you calibrate your monitor, if you haven't already, so we'll be able to work at a default setting that eliminates possible colour or tone distortions caused by the monitor being too bright or dark. You can calibrate your CRT monitor using Adobe Gamma Monitor Calibration Utilities (it's automatically installed along with Adobe Photoshop). LCD monitors can be calibrated using their own calibrator or, if that's unavailable, by setting them to the factory defaults.



Color Settings

Settings: Monitor Color

☐ Advanced Mode

Working Spaces

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CMYK: U.S. Web Coated (SWOP) v2
Gray: Gray Gamma 2.2
Spot: Dot Gain 20%

Color Management Policies

RGB: Off
CMYK: Off
Gray: Off
Profile Mismatches: ☑ Ask When Opening ☐ Ask When Pasting
Missing Profiles: ☐ Ask When Opening

Description

Monitor Color: Preparation of content for video and on-screen presentation. Emulates color behavior of most video applications. This setting is not recommended for documents with CMYK data.

Fig.01

Other colour space dependant settings can be found in Photoshop under the Edit/Colour Setting menu option (**Fig.01**). Usually the default setting is ideal for a standard monitor (Settings/Monitor Colour), but if the final image is created for a given technological display, e.g. European Standard CMYK offset printing, then it's recommended to select the most suitable option (e.g.: Settings/Europe Prepress Defaults) so that the visuals will be as similar to the final image as possible.

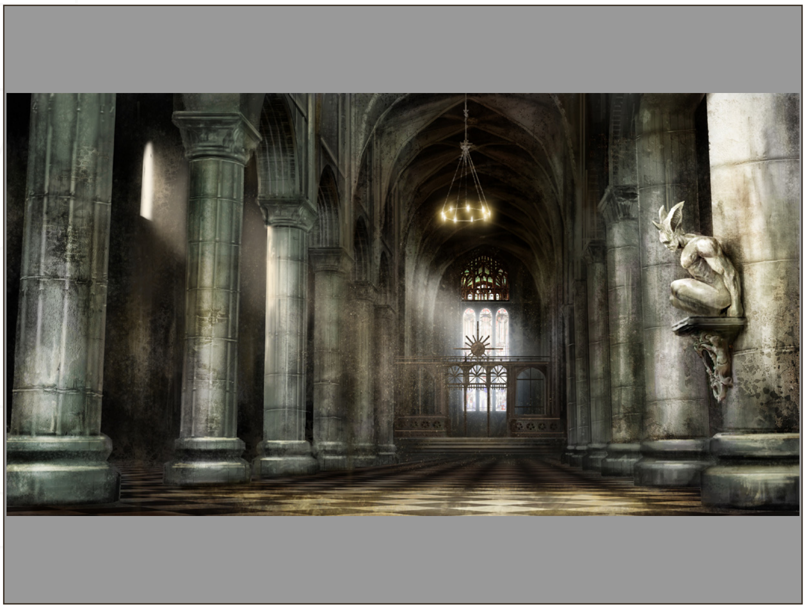


Fig.02

We will now try to put the given render passes from the Cinema 4D artist together so that the finished image resembles the concept design as closely as possible (**Fig.02**).

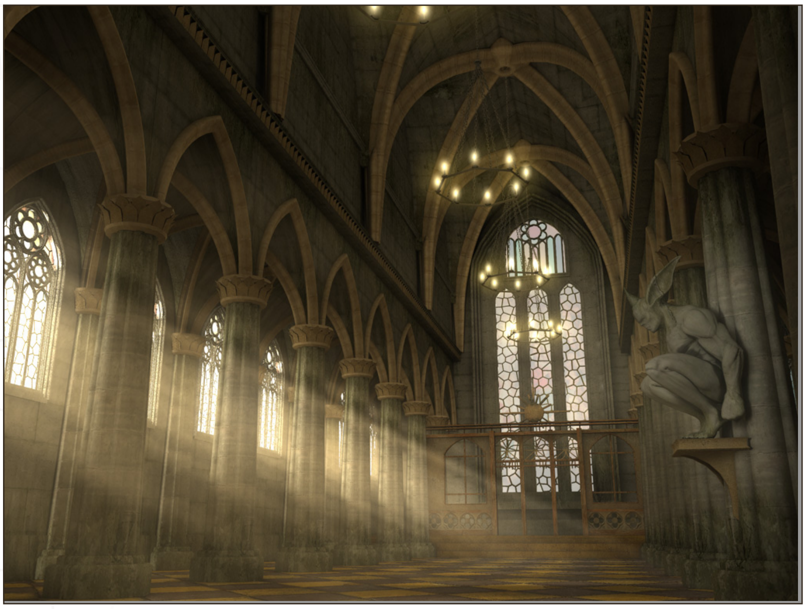


Fig.03

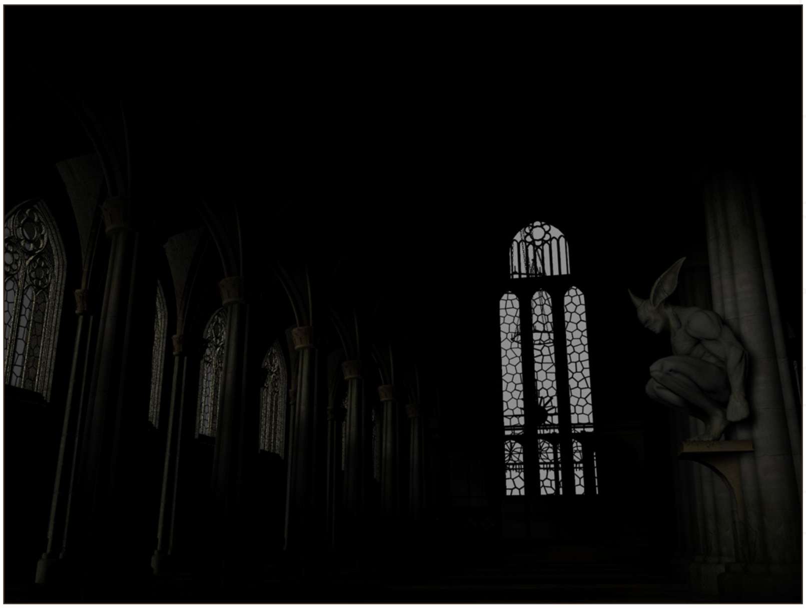
EXISTING PASSES

We have the following passes:

- Final Render pass (**Fig.03**)

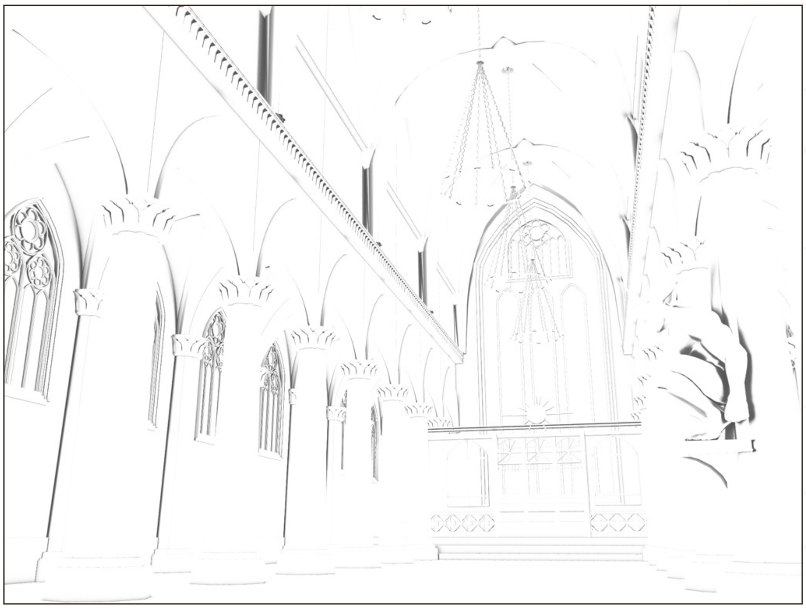
- Colour (Diffuse Colour) pass (**Fig.04**)

Fig.04



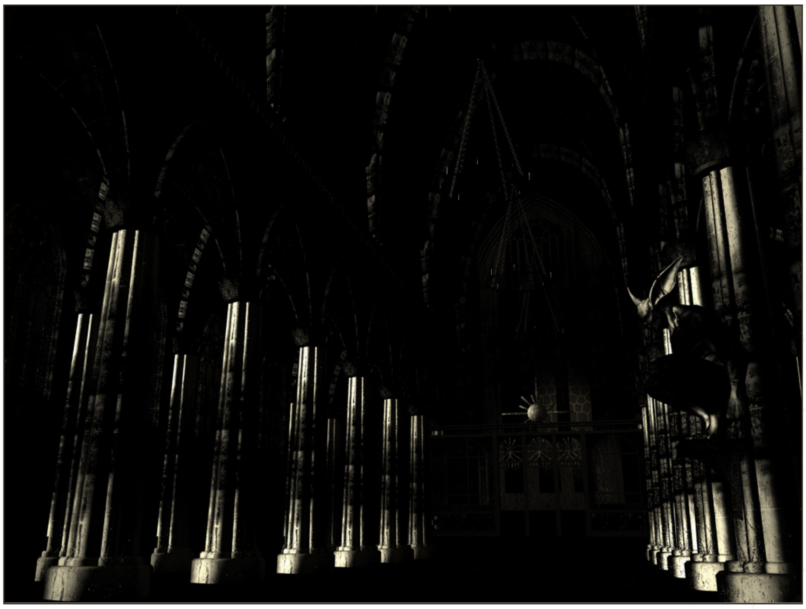
- Ambient Occlusion pass (**Fig.05**)

Fig.05



- Specular pass (**Fig.06**)

Fig.06



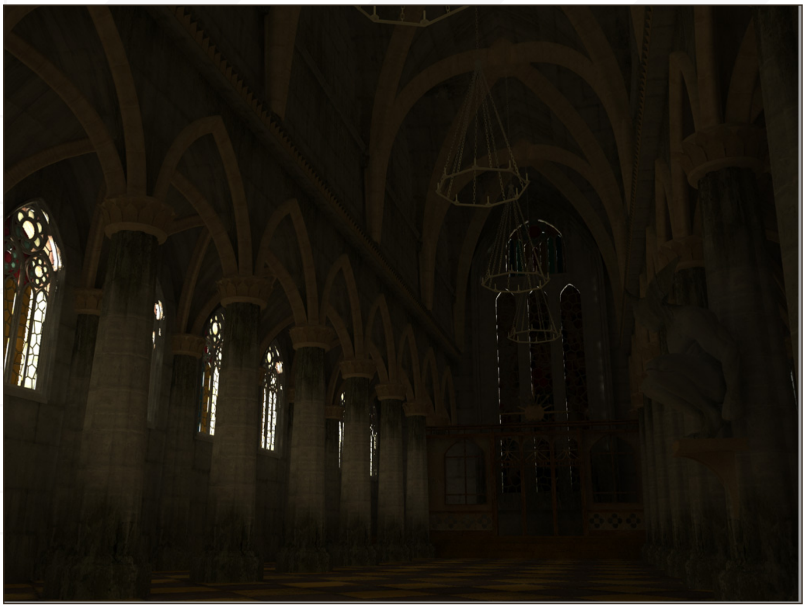


Fig.07

- Global Illumination pass (**Fig.07**)

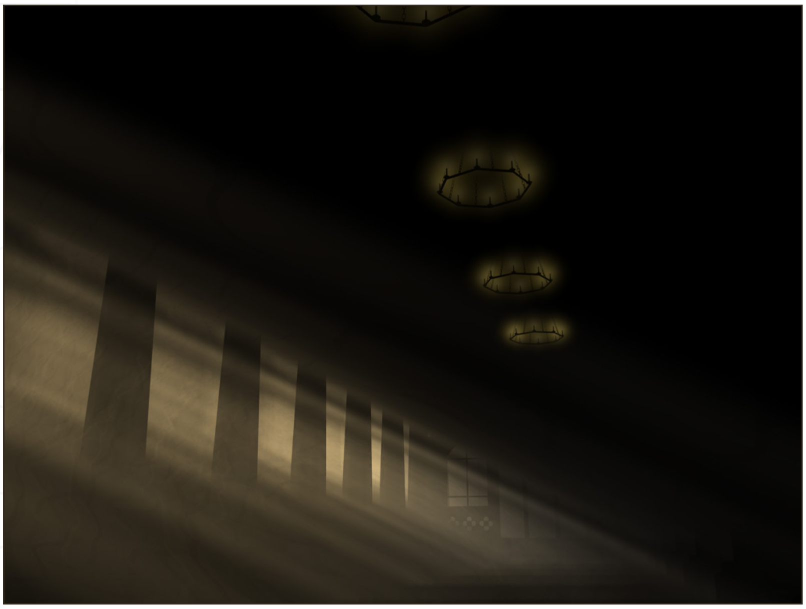


Fig.08

- Atmosphere (Volumetric Light effects) pass (**Fig.08**)

Fig.09

- Object Glow pass (**Fig.09**)

- Lens Effects pass (**Fig.10**)

Fig.10

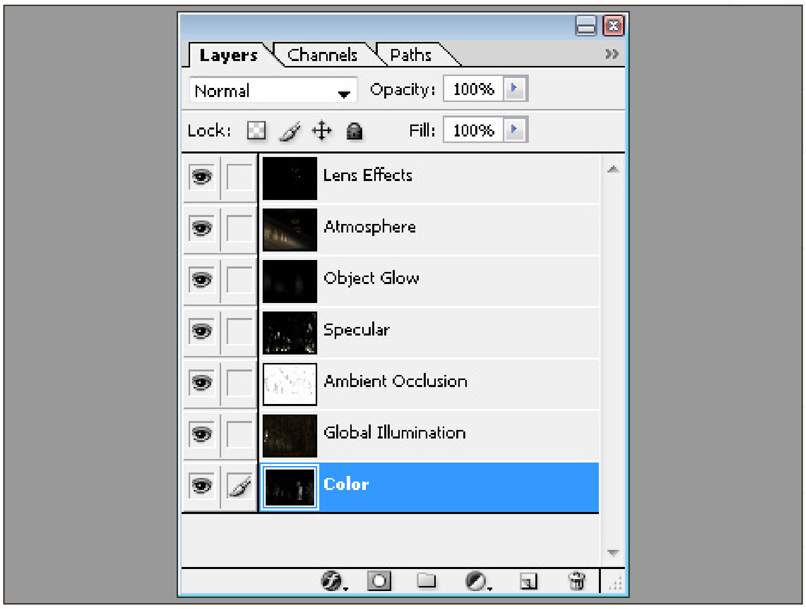
STEP 1: PUTTING ALL THE PASS LAYERS TOGETHER IN A DOCUMENT

First we need to put the render passes together in this order, and with these Layer Blending settings (to set the Blending Mode, choose an option from the scroll down menu on the Layers palette) (**Fig.11**):

- Colour
- Global Illumination (Linear Dodge)
- Ambient Occlusion (Multiply)
- Specular (Linear Dodge)
- Object Glow (Linear Dodge)
- Atmosphere (Linear Dodge)
- Lens effects (Linear Dodge)

After putting everything together, we can see that the specular effect is far too strong (**Fig.12**) compared to the one visible on the Final Render, so we need to tune its opacity until we achieve the desired effect.

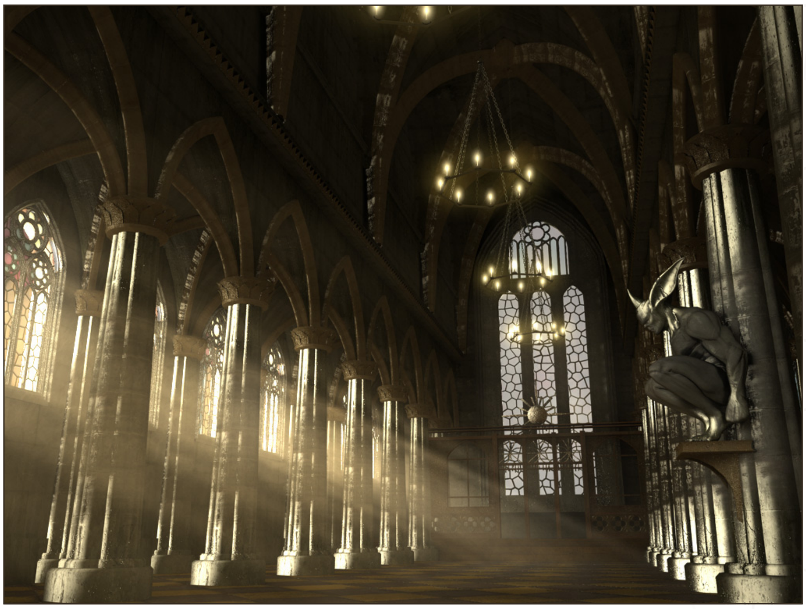
Fig.11



Normal
Opacity: 100%
Fill: 100%

Lens Effects
Atmosphere
Object Glow
Specular
Ambient Occlusion
Global Illumination
Color

Fig.12



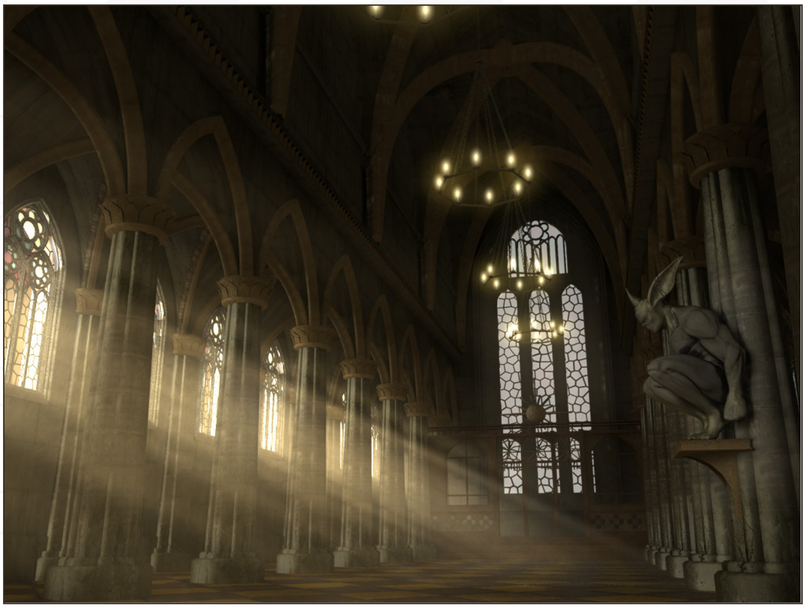


Fig.13

On the Layers palette, set the Opacity of the Specular pass to 18% (**Fig.13**).

STEP 2: FINE-TUNING

To make the final image match the Gothic interior concept art, the Opacity of the Atmosphere pass (in other words, volumetric effect) layer was turned down to 50%, and the glow effect of the windows was strengthened by duplicating the Object Glow pass twice. **Fig.14** shows the image with the double-duplicated Object Glow pass and the adjusted Atmosphere pass.

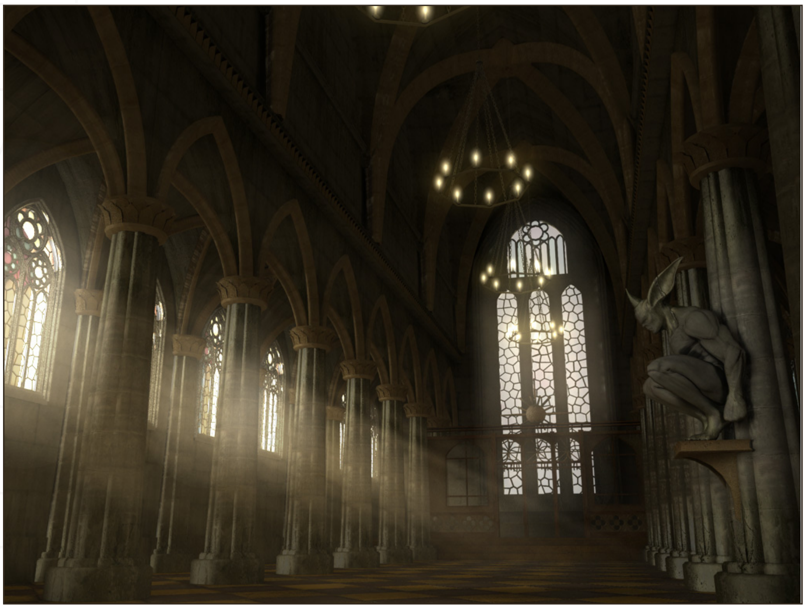


Fig.14

STEP 3: ADJUSTING COLOUR

To get the tones and colours to match the original concept art, we can adjust the tonal range of bright and dark tones with a Curves Adjustment layer (on the Layers palette, click on the "Create new fill or adjustment layer" icon/ Curves).

You can select which colour channel you want to adjust in the Curves dialogue box; in this case it is the default RGB (**Fig.15**). By default, Curves displays the intensity values from 0 to 255 for RGB images with black (0) at the bottom left corner, and the brightest intensity (255) in the top right corner. Set the brighter values brighter on all the RGB channels; fix the mean by clicking the middle of the curve, thus creating a control point, and then set its Input and Output values, appearing in the bottom left corner of the dialogue, to 126-126. Now create a point in the upper bright part, and set its input to 194 and its output to 219, either by typing them in

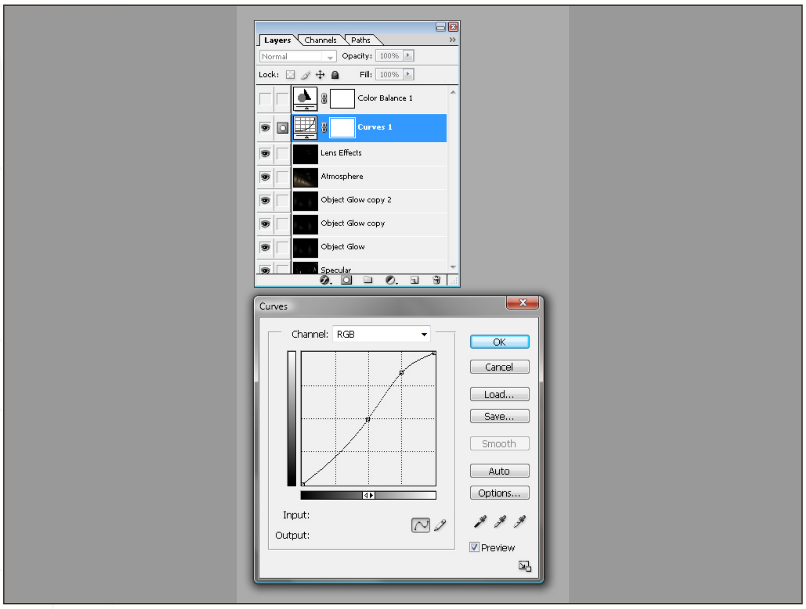


Fig.15

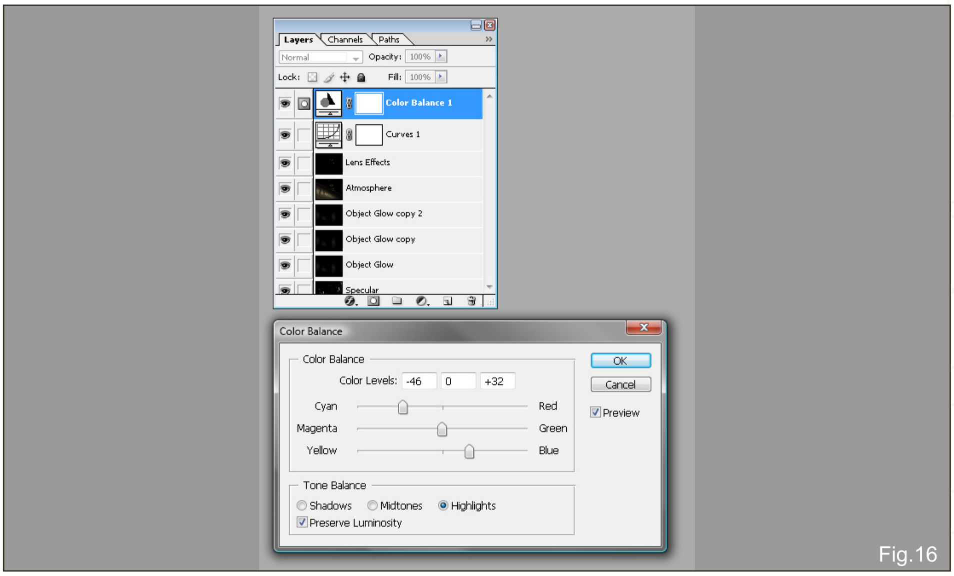
Normal
Opacity: 100%
Lock:
Fill: 100%
Color Balance 1
Curves 1
Lens Effects
Atmosphere
Object Glow copy 2
Object Glow copy
Object Glow
Specular

Curves
Channel: RGB
Input:
Output:
☑ Preview

or by moving the point with the mouse. The bright values (the windows and the glow effects on them) become brighter and the dark values become a bit darker, too.

After adjusting the tones, shift the highlight values of the image towards cold colours using a Colour Balance adjustment layer (on the Layers palette, click on the “Create new fill or adjustment layer” icon/Colour Balance) with Cyan set to -46 and Blue to +32 (**Fig.16**).

And here is the final image, after all the adjustments have been made (**Fig.17**).



Normal
Opacity: 100%
Lock:
Fill: 100%

Color Balance

Color Balance
Color Levels: -46 0 +32
Cyan Red
Magenta Green
Yellow Blue

Tone Balance
○ Shadows ○ Midtones ● Highlights
☑ Preserve Luminosity

☑ Preview

Fig.16

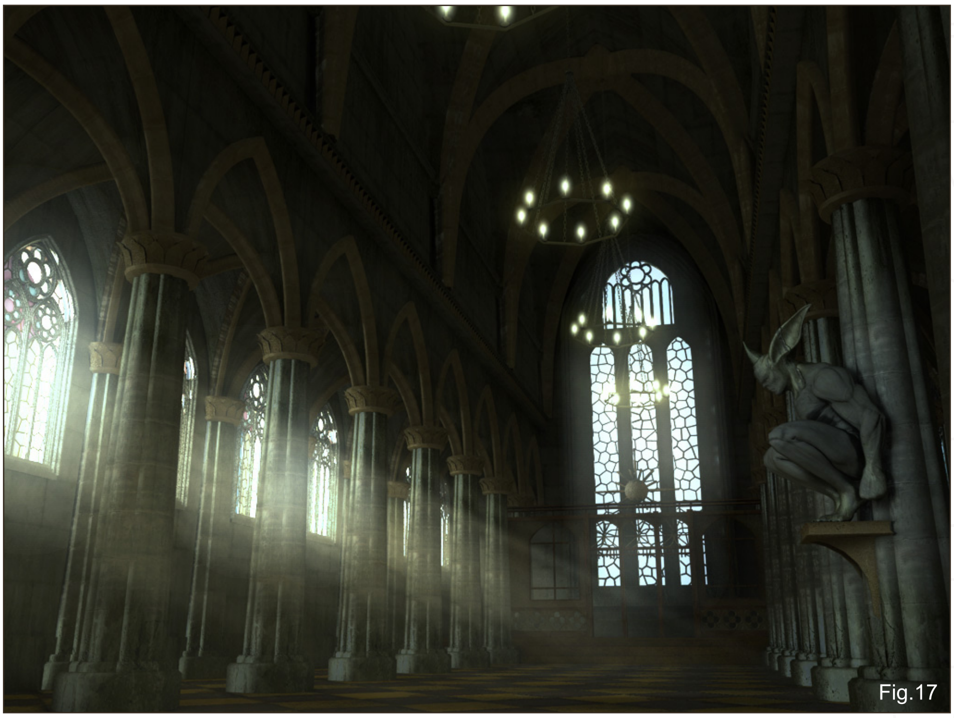


Fig.17

TIPS FOR HANDLING LAYERS

- The mask of a masked layer can be easily switched on and off. Just left-click on the mask while holding down the Shift key
- Putting the layers into sets makes them easy to duplicate, so you can always leave a “backup copy” of the arranged layers in the file. This can be useful if you merge a copied set for using lens effects
- A layer or layer set can be easily duplicated by grabbing it on the Layers palette and dragging it down onto the “Create new layer” icon on the bottom of the palette
- A new layer set can be created by clicking the “Create new set” icon, which can be found on the bottom of the palette. You can then simply drag the layers into it. Another option is linking the layers belonging to one set with the currently selected layer to it, and then selecting Layer Set from Linked on the Layer palette

CONCLUSION

The examples show clearly that effects in a scene rendered in multiple passes can be adjusted more easily and finely than in the rendering software itself. The more passes available, the more finely the certain effects can be adjusted; however, it’s enough to use only those passes which are sufficient for fine-tuning the effects in the scene.

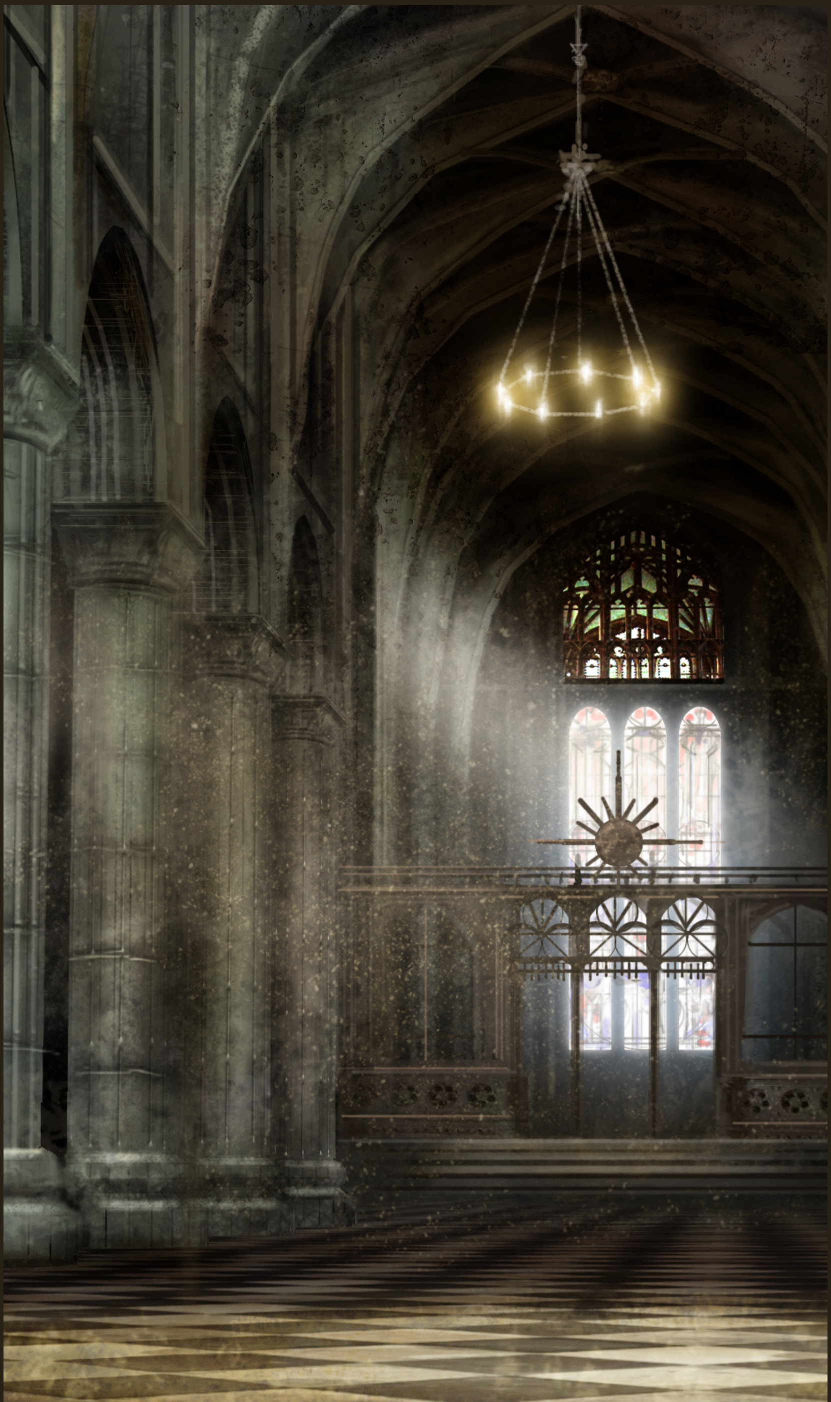
Originally designed & modelled by:
RICHARD TILBURY

GOTHIC CHURCH
INTERIOR CREATION
PART 5: FINAL CHAPTER – POST-PRODUCTION IN PHOTOSHOP
ZOLTAN KORCSOK

For more from this artist visit:
http://trurl.cgsociety.org/
Or contact:
zkorcsok@kapos-net.hu

Gothic Church

Interior Creation



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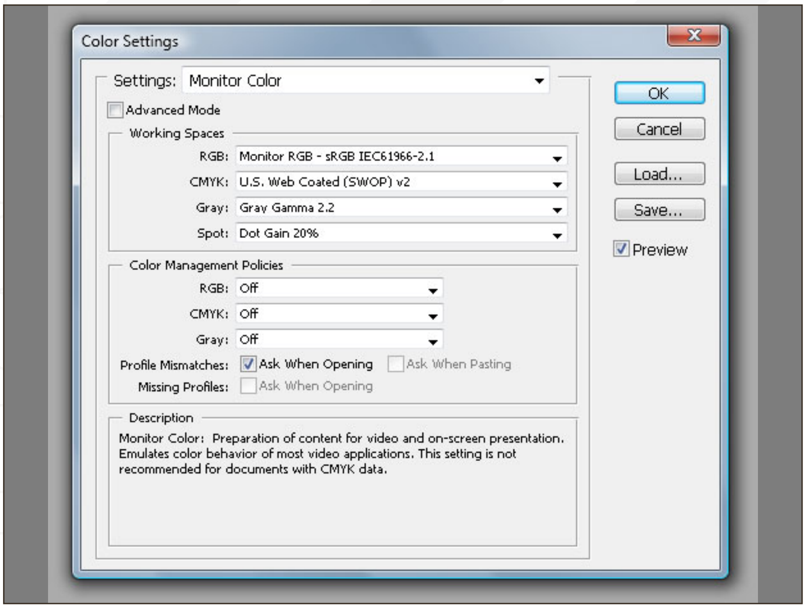

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☐ Advanced Mode

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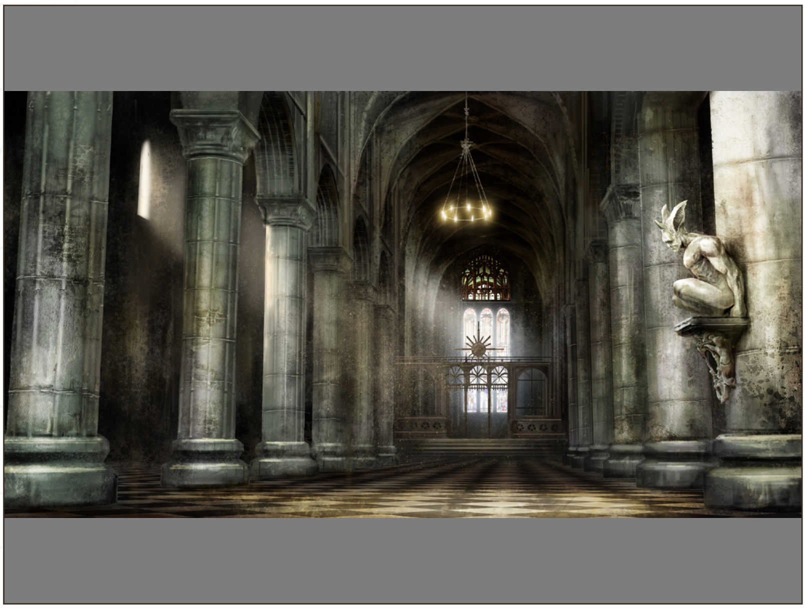


Fig.02

We will now try to put the given render passes from the LightWave artist together so that the finished image resembles the concept design as closely as possible (**Fig.02**).

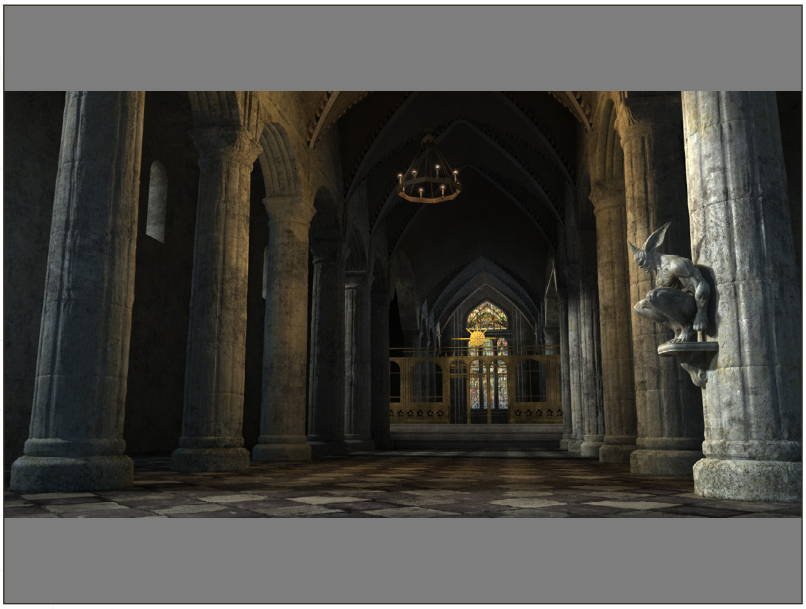


Fig.03

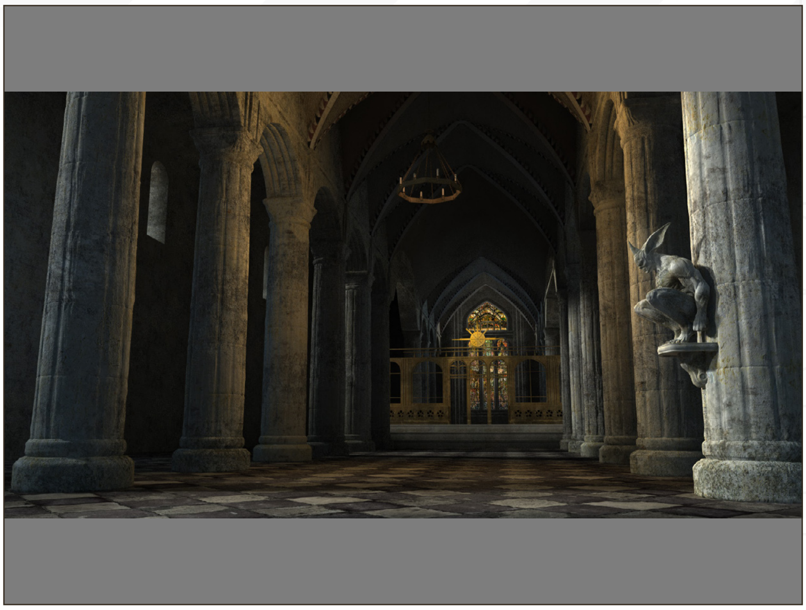
EXISTING PASSES

We have the following passes:

- Final Render pass (**Fig.03**)

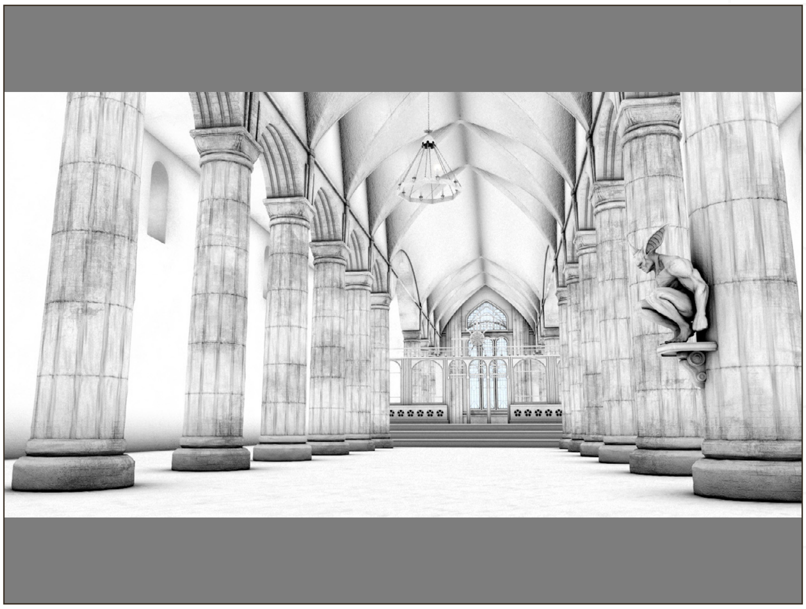
- Diffuse Colour Pass (**Fig.04**)

Fig.04



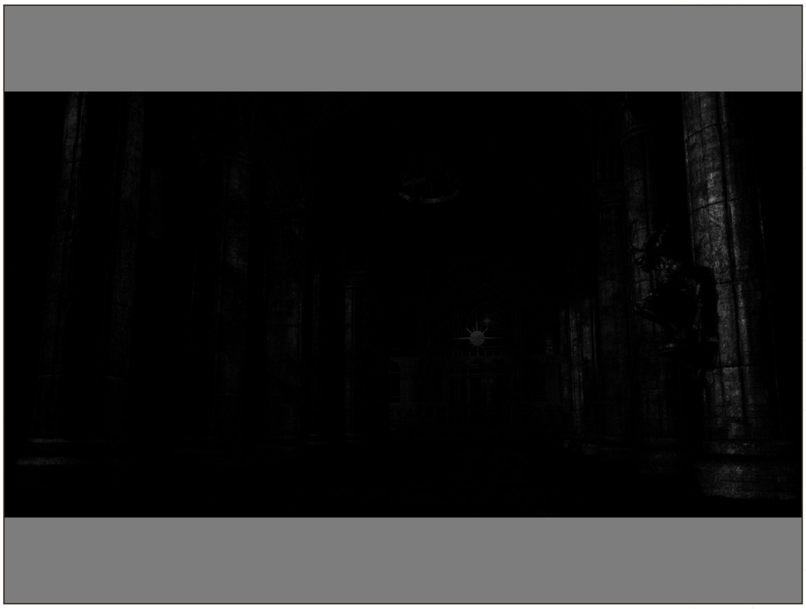
- Ambient Occlusion Pass (**Fig.05**)

Fig.05



- Specular Shading Pass (**Fig.06**)

Fig.06



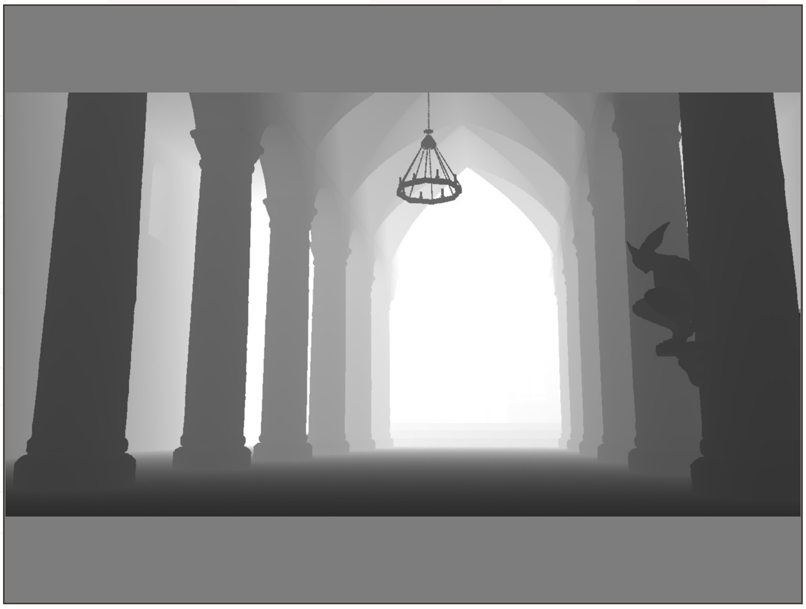


Fig.07

- Depth (**Fig.07**)

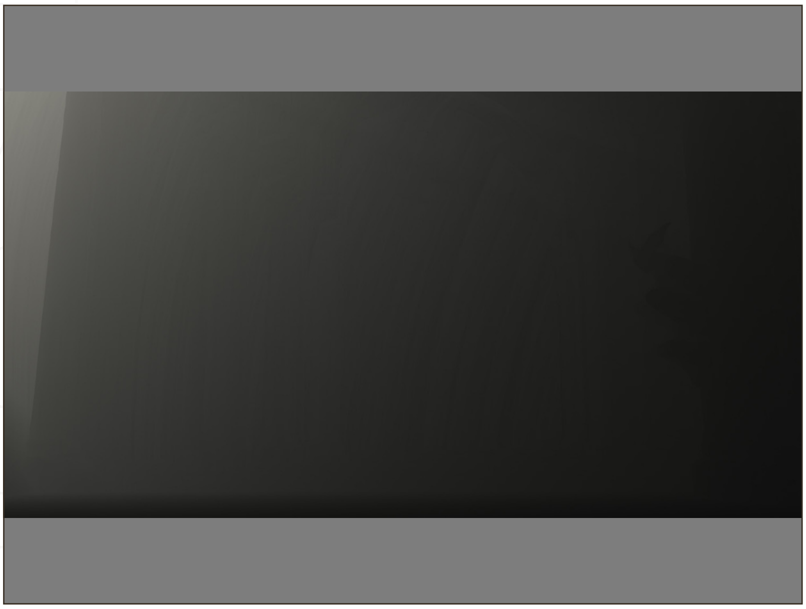


Fig.08

We also have the volumetric effects of the three windows of the aisle:

- Volumetric Window 2 pass (**Fig.08**)

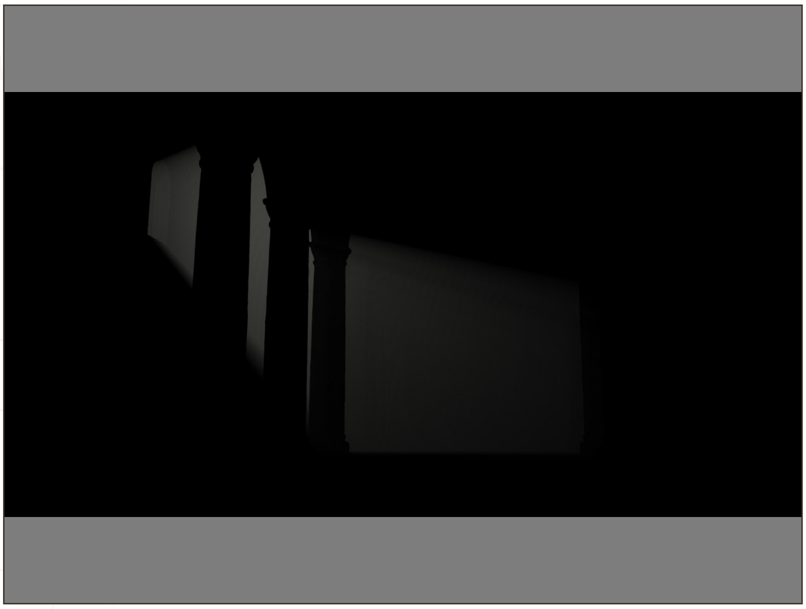
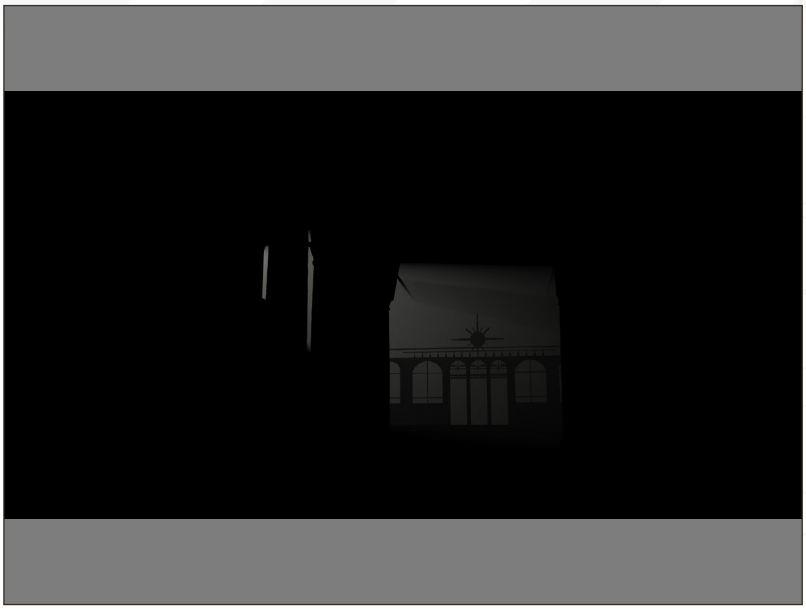


Fig.09

- Volumetric Window 3 pass (**Fig.09**)

- Volumetric Window 4 pass (**Fig.10**)

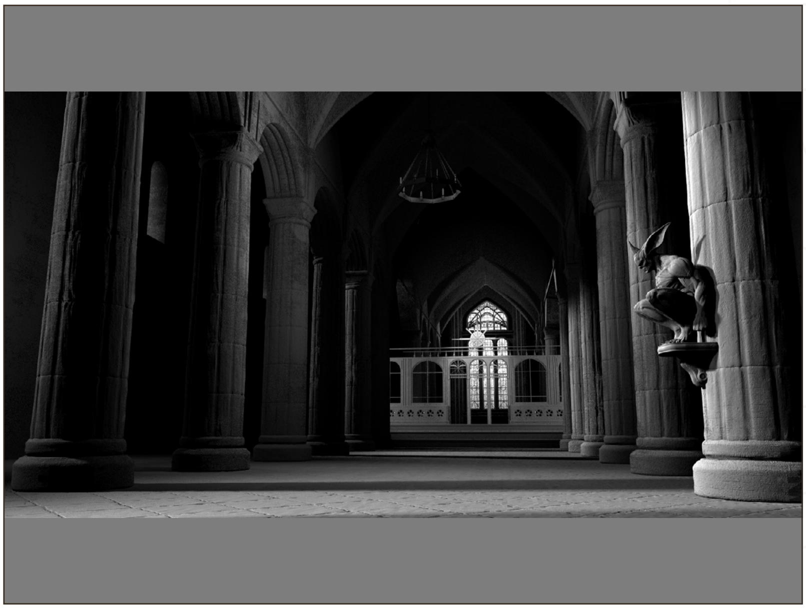
Fig.10



And these additional render passes:

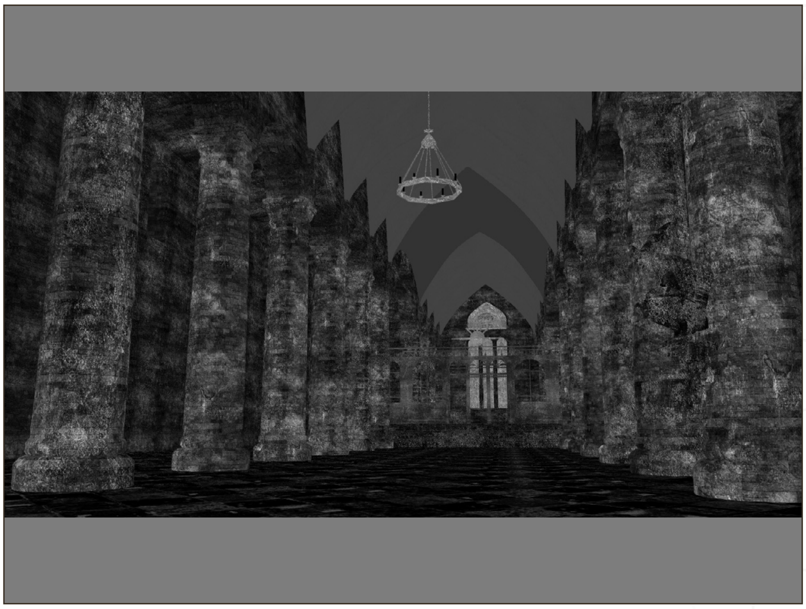
- Diffuse Shading pass (**Fig.11**)

Fig.11



- Specular pass (**Fig.12**)

Fig.12



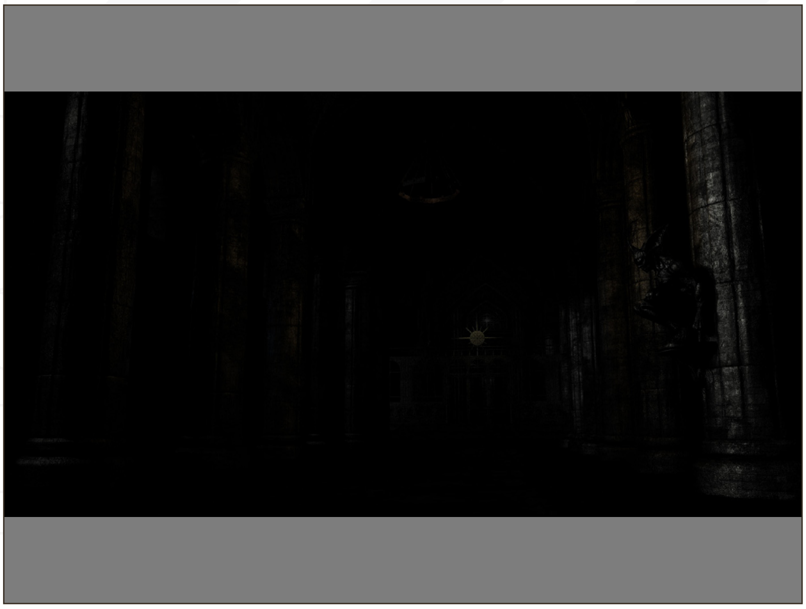


Fig.13

- Specular Colour pass (**Fig.13**)

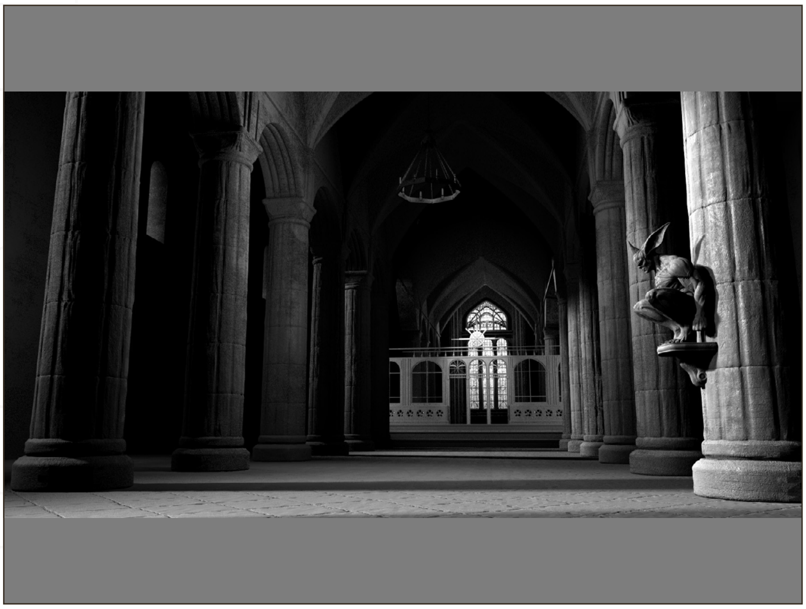


Fig.14

- Shading pass (**Fig.14**)

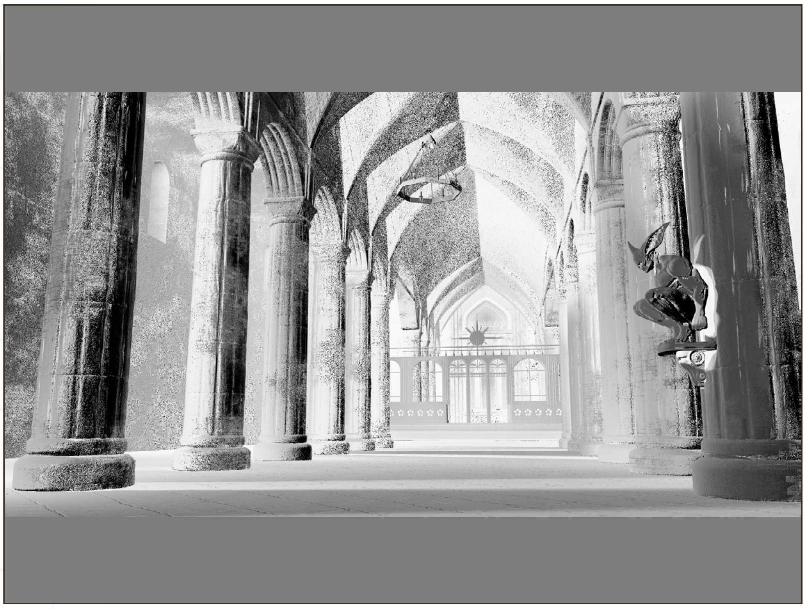


Fig.15

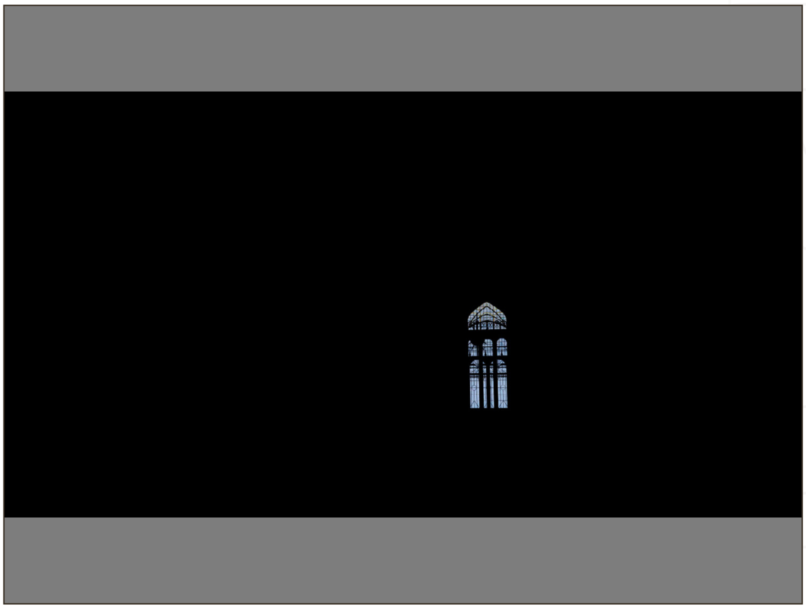
- Shadow pass (**Fig.15**)

- L0: Background pass (**Fig.16**)

Fig.16

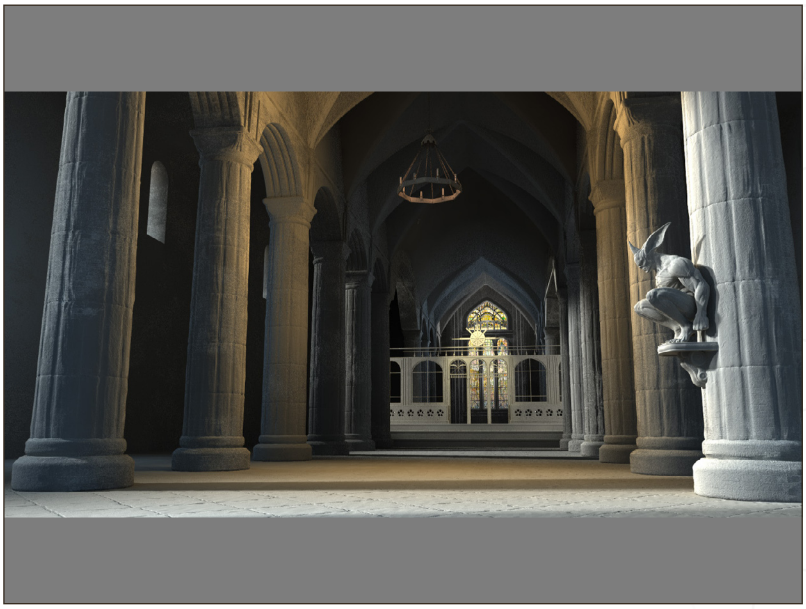
- L1: Refraction pass (**Fig.17**)

Fig.17



- L2: Diffuse Lighting pass (**Fig.18**)

Fig.18



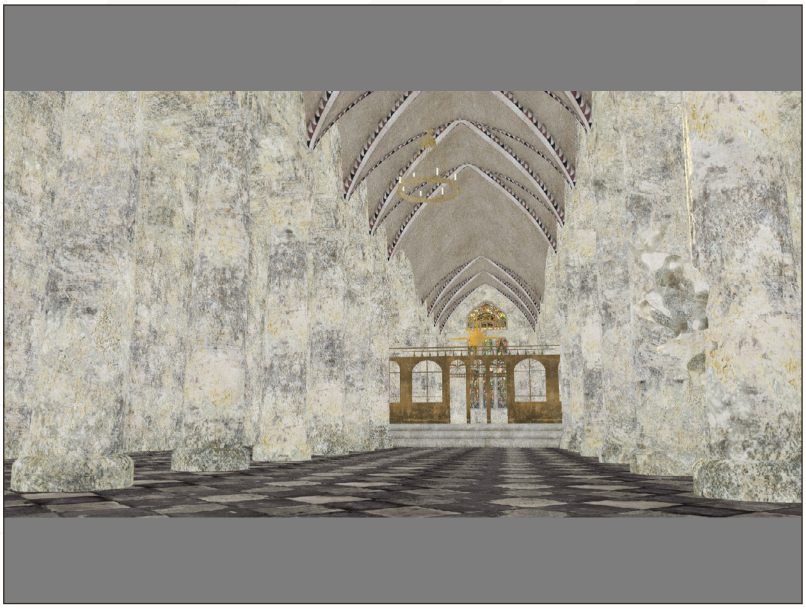


Fig.19

- L3: Surface pass (**Fig.19**)

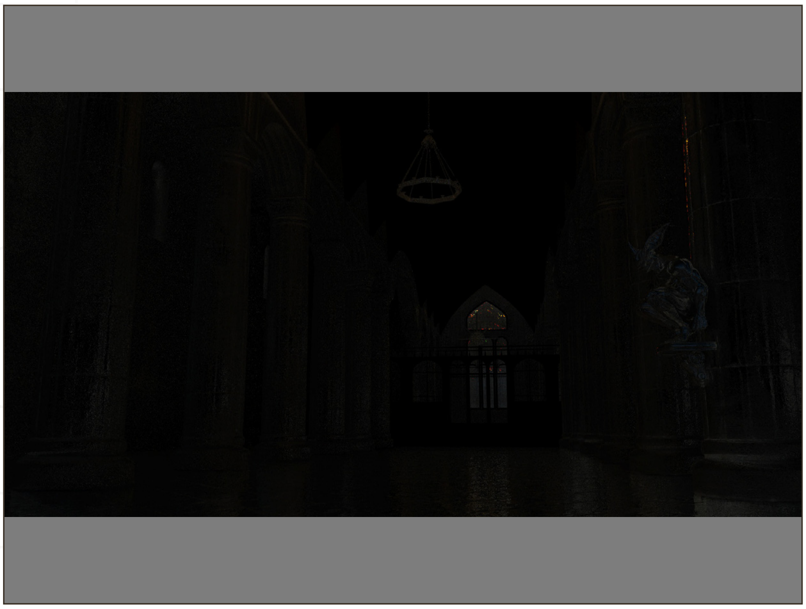


Fig.20

- L4: Reflection pass (**Fig.20**)

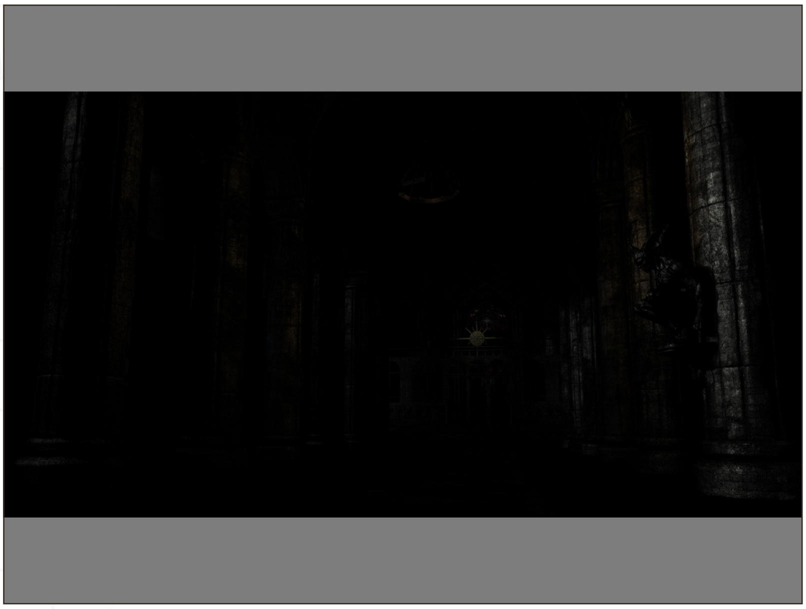
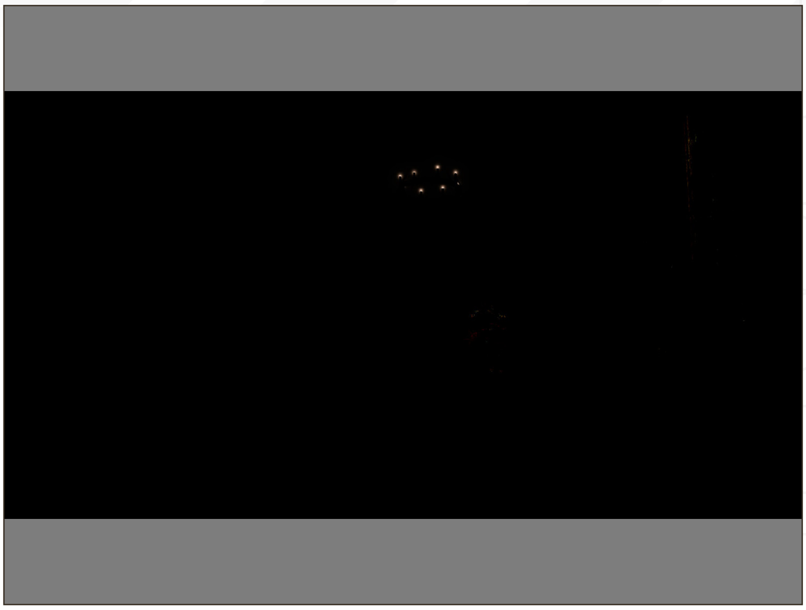


Fig.21

- L5: Specular pass (**Fig.21**)

- L6: Effects (effects of the candle glow and the stained glass window) (**Fig.22**)

Fig.22

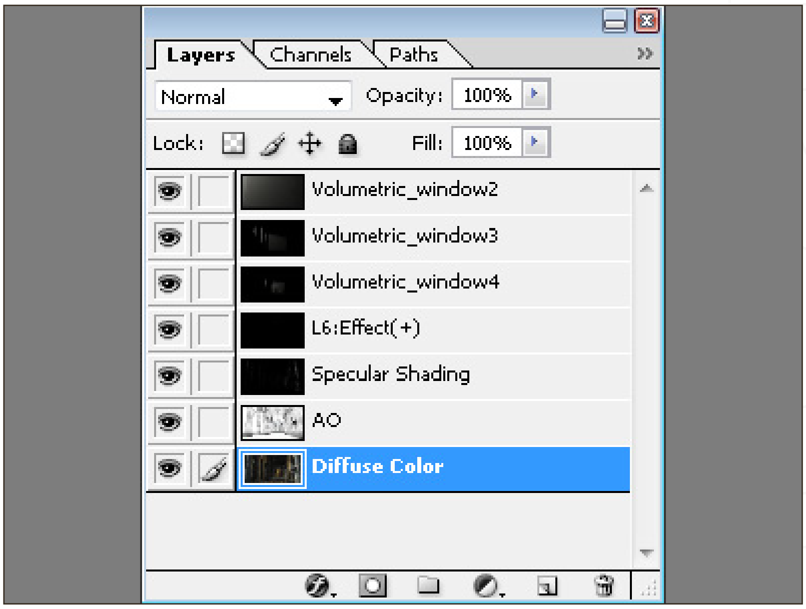


STEP 1: PUTTING ALL THE PASS LAYERS TOGETHER IN A DOCUMENT

Using the available passes, the image can be put together in more than one way. The base file is put together with the following layer order and with these Layer Blending settings (to set the Blending Mode, choose an option from the scroll down menu on the Layers palette) (**Fig.23**):

- Diffuse Colour (Normal blending)
- Ambient Occlusion (Multiply blending)
- Specular Shading (Linear Dodge blending)
- L6: Effects (Linear Dodge blending)
- Volumetric Window 4 (Linear Dodge blending)
- Volumetric Window 3 (Linear Dodge blending)
- Volumetric Window 2 (Linear Dodge blending)

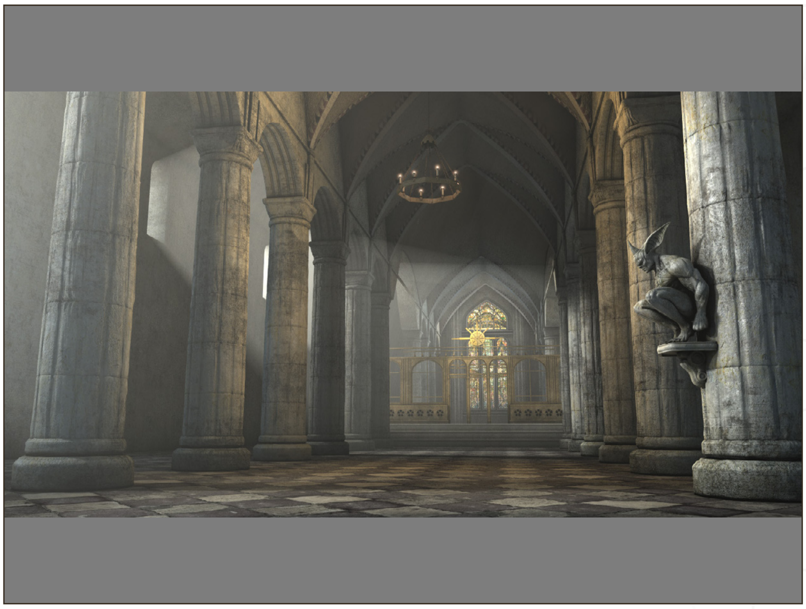
Fig.23



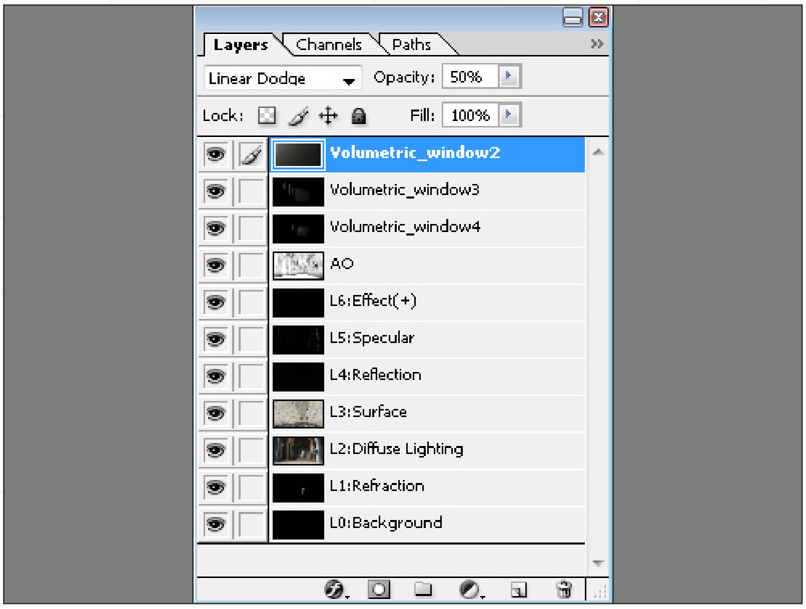
Normal
Opacity: 100%
Fill: 100%
Volumetric_window2
Volumetric_window3
Volumetric_window4
L6:Effect(+)
Specular Shading
AO
Diffuse Color

Here you can see that the image has been put together using the above base passes (**Fig.24**).

Fig.24



Using other passes, a variation on the original can be put together which will allow us to adjust more effects with finer detail, for example the following (**Fig.25**):



Linear Dodge Opacity: 50%

Lock: Fill: 100%

- Volumetric_window2
- Volumetric_window3
- Volumetric_window4
- AO
- L6:Effect(+)
- L5:Specular
- L4:Reflection
- L3:Surface
- L2:Diffuse Lighting
- L1:Refraction
- L0:Background

Fig.25

- L0: Background (Normal blending)
- L1: Refraction (Linear Dodge blending)
- L2: Diffuse Lighting (Linear Dodge blending)
- L3: Surface (Multiply blending)
- L4: Reflection (Linear Dodge blending)
- L5: Specular (Linear Dodge blending)
- L6: Effects (Linear Dodge blending)
- Ambient Occlusion (Multiply Blending)
- Volumetric_window4 (Linear Dodge blending)
- Volumetric_window3 (Linear Dodge blending)
- Volumetric_window2 (Linear Dodge blending)

Here you can see that the image has been put together using the passes listed above (**Fig.26**).

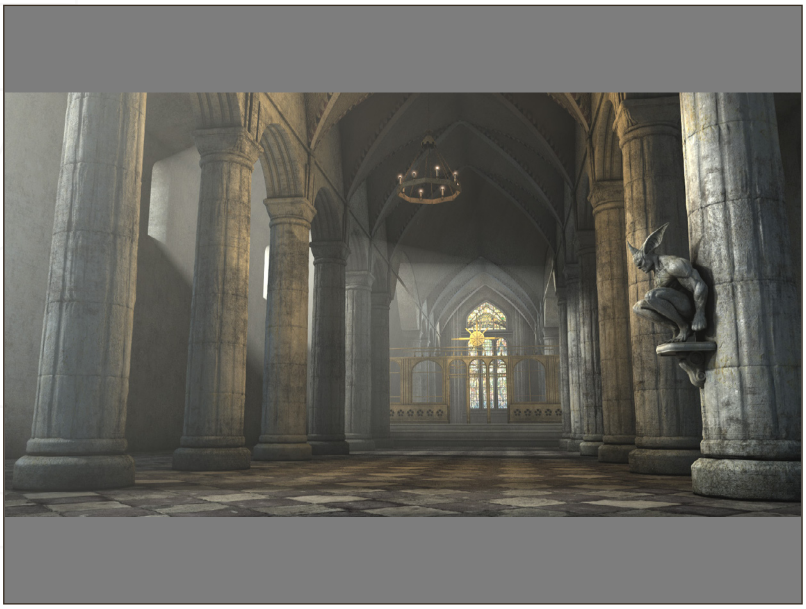


Fig.26

STEP 2: FINE-TUNING

We now need to turn down the Opacity of the layer of the volumetric effect (Volumetric Window 2 pass) in the foreground to 60%, because it has dimmed out the farther tone values on the image. Here you can see the result of the opacity change (**Fig.27**).

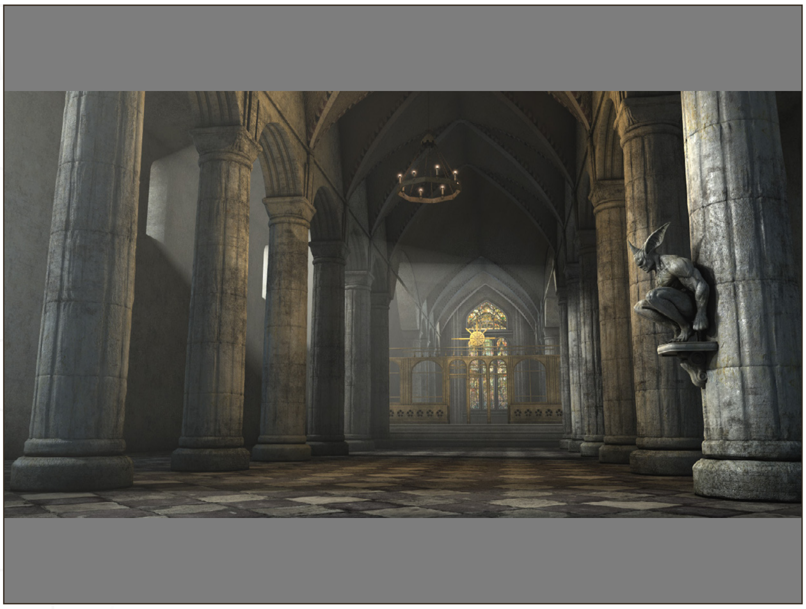
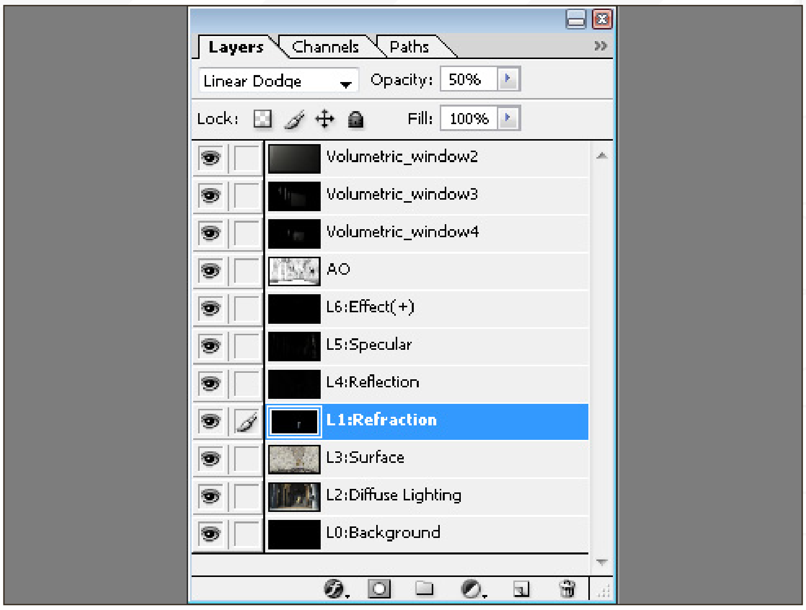


Fig.27

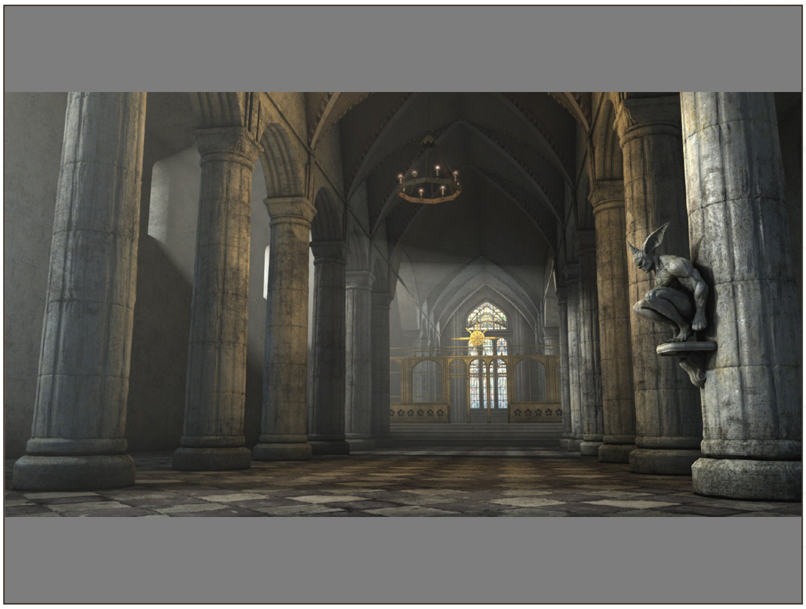
In the second variation we change the order of the layers: the L1: Refraction layer moves above the Surface layer with the opacity of 50%, making the glass window brighter. You can see the layer setup after the move and change of opacity in **Fig.28**.

Fig.28


Linear Dodge
Opacity: 50%
Fill: 100%

And here is the image after adjusting the Refraction layer (**Fig.29**).

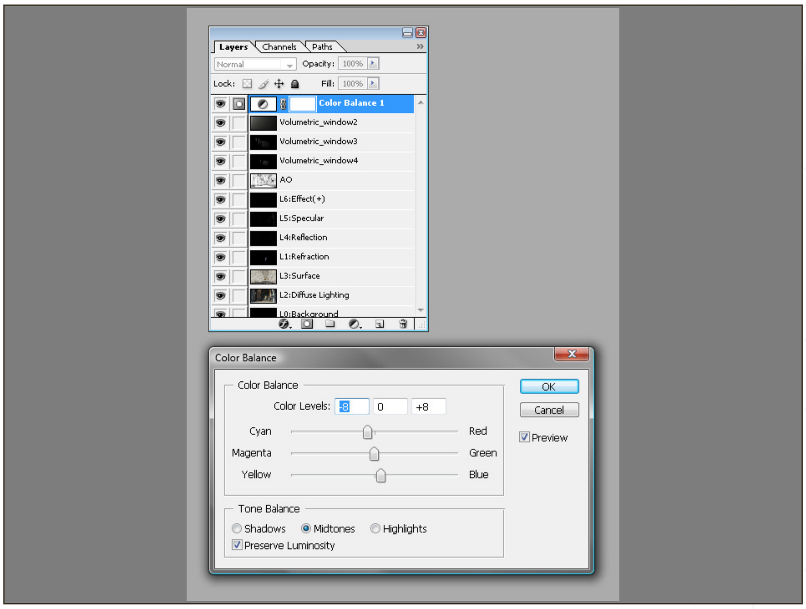
Fig.29



Step 3: Adjusting Colour and Depth of Field

We now need to tune the colours to match the Gothic interior concept art, so we want to shift the mid-tone colours to a colder hue by using a Colour Balance adjustment layer with the values: -8 for Cyan and +8 for Blue (click on the "Create a new fill or adjustment layer" icon in the Layers palette) (**Fig.30**).

Fig.30


Normal
Opacity: 100%
Fill: 100%

Color Balance
Color Levels: -8 0 +8
Tone Balance
○ Shadows ● Midtones ○ Highlights
☑ Preserve Luminosity
☑ Preview

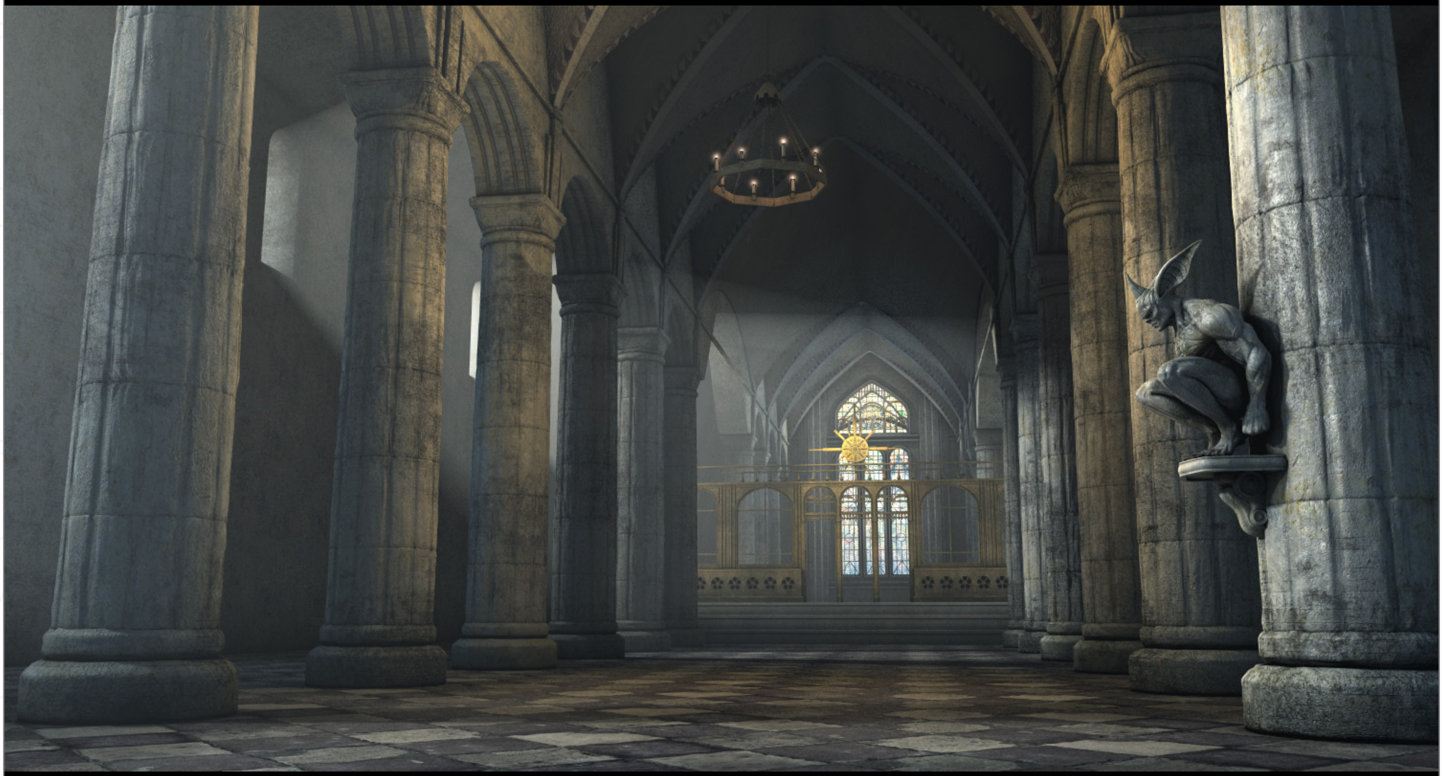


Fig.31

And here is the final image after applying the Colour Balance adjustment layer (**Fig.31**).

TIPS FOR HANDLING LAYERS

- The mask of a masked layer can be easily switched on and off. Just left-click on the mask while holding down the Shift key

- Putting the layers into sets makes them easy to duplicate, so you can always leave a “backup copy” of the arranged layers in the file. This can be useful if you merge a copied set for using lens effects

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CONCLUSION

The examples show clearly that effects in a scene rendered in multiple passes can be adjusted more easily and finely than in the rendering software itself. The more passes available, the more finely the certain effects can be adjusted; however, it’s enough to use only those passes which are sufficient for fine-tuning the effects in the scene.

Originally designed & modelled by:

RICHARD TILBURY

GOTHIC CHURCH INTERIOR CREATION

PART 5: FINAL CHAPTER – POST-PRODUCTION IN PHOTOSHOP

ZOLTAN KORCSOK

For more from this artist visit:
http://trurl.cgsociety.org/
Or contact:
zoltankorcsok@gmail.com

Image : chen qingfeng

Gothic Church

Interior Creation

This series will provide an overview of the principal techniques used to create a gothic interior based upon a concept painting, along with a tutorial on the process of sculpting a gargoyle character in ZBrush. Key methods covering modelling, texturing, lighting and rendering will be outlined over the course of the series and culminate in a chapter on post production and how to composite numerous render passes into a final image.

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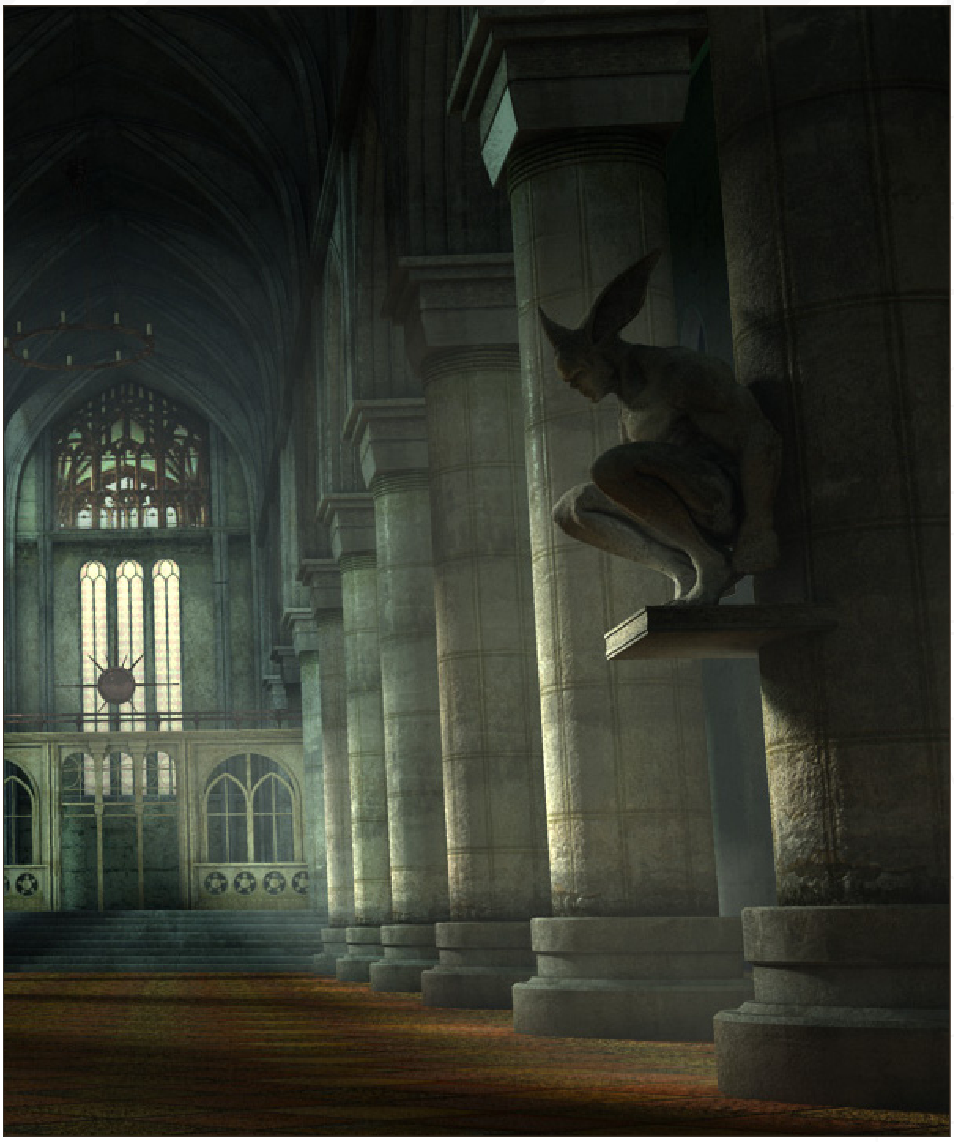

Gothic Church
INTERIOR CREATION
PART 5: FINAL CHAPTER – POST-PRODUCTION IN PHOTOSHOP

Created In:
Photoshop

INTRODUCTION

Rendering into render passes makes it possible to modify tones, colours and certain effects in the rendered image using Photoshop. Usually the most basic passes rendered for an image are as follows (note that the names might be a little different in certain software programs):

- Final Render or Final Colour: This pass is the render containing all the final effects, lighting, etc., which we will use as a reference for putting all the passes together

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- Specular or Specular Shading: This contains the specular effects of the materials in the scene caused by the lighting

- Ambient Occlusion: This contains the ambient occlusion effect; it displays the areas hidden to the ambient light shaded; It shades the more obscure parts of the models in the scene. Using this pass gives the details more depth

- Object Glow: This contains the glow effects in the scene

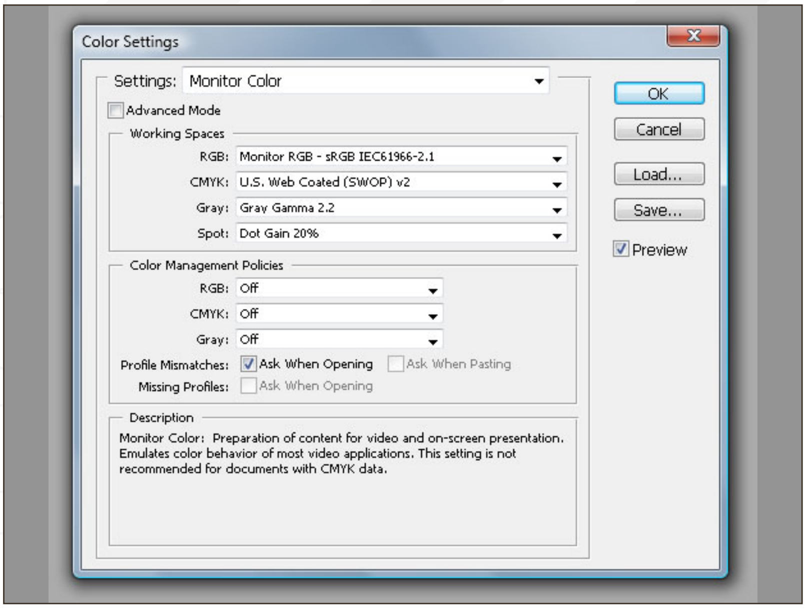
- ZDepth or Depth: This contains the depth map of the scene measured from the camera; we use this pass in Photoshop to create a lens depth of field effect, amongst other things

- Volumetric: This contains the volumetric lighting effects

Other available passes can be utilised too, in order to achieve finer effects (e.g. Fog render pass, Global Illumination render pass, Specular Colour render pass, and so on).

MONITOR CALIBRATION

Before starting the work, it's strongly recommended that you calibrate your monitor, if you haven't already, so we'll be able to work at a default setting that eliminates possible colour or tone distortions caused by the monitor being too bright or dark. You can calibrate your CRT monitor using Adobe Gamma Monitor Calibration Utilities (it's automatically installed along with Adobe Photoshop). LCD monitors can be calibrated using their own calibrator or, if that's unavailable, by setting them to the factory defaults.



Color Settings

Settings: Monitor Color
☐ Advanced Mode

Working Spaces
RGB: Monitor RGB - sRGB IEC61966-2.1
CMYK: U.S. Web Coated (SWOP) v2
Gray: Gray Gamma 2.2
Spot: Dot Gain 20%

Color Management Policies
RGB: Off
CMYK: Off
Gray: Off
Profile Mismatches: ☑ Ask When Opening ☐ Ask When Pasting
Missing Profiles: ☐ Ask When Opening

Description
Monitor Color: Preparation of content for video and on-screen presentation. Emulates color behavior of most video applications. This setting is not recommended for documents with CMYK data.

Fig.01

Other colour space dependant settings can be found in Photoshop under the Edit/Colour Setting menu option (**Fig.01**). Usually the default setting is ideal for a standard monitor (Settings/Monitor Colour), but if the final image is created for a given technological display, e.g. European Standard CMYK offset printing, then it's recommended to select the most suitable option (e.g.: Settings/Europe Prepress Defaults) so that the visuals will be as similar to the final image as possible.

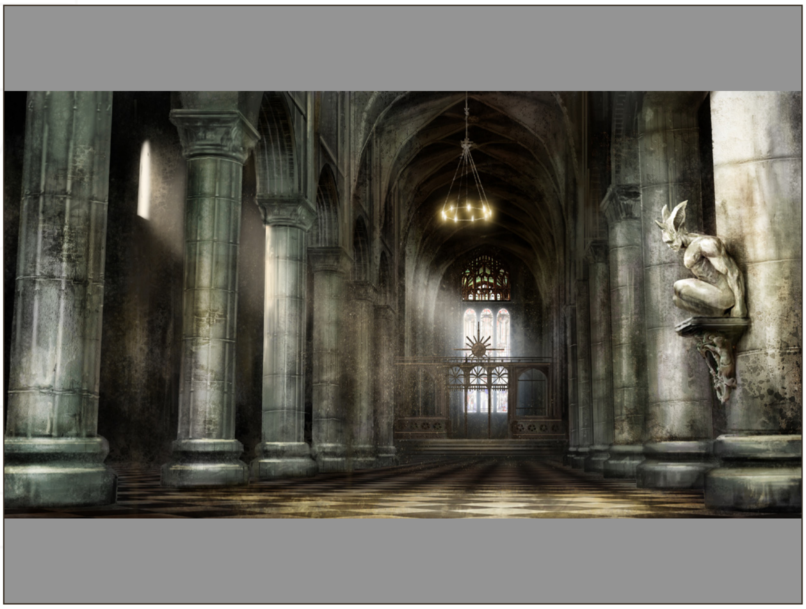


Fig.02

We will now try to put the given render passes from the Maya artist together so that the finished image resembles the concept design as closely as possible (**Fig.02**).

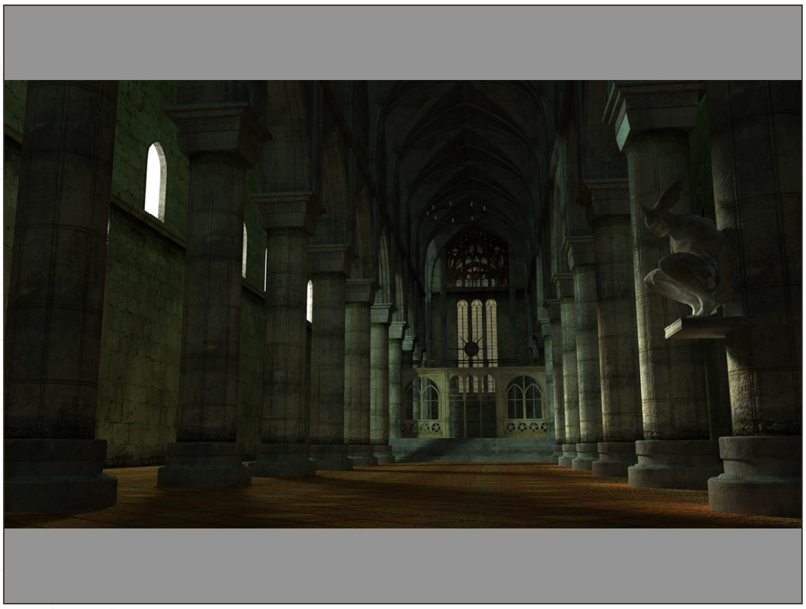


Fig.03

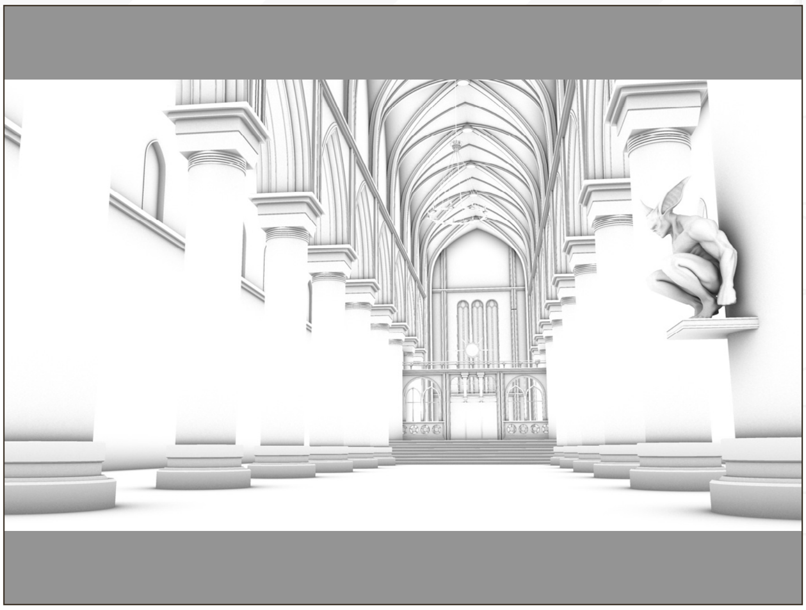
EXISTING PASSES

We have the following passes:

- Final Colour Render pass (**Fig.03**)

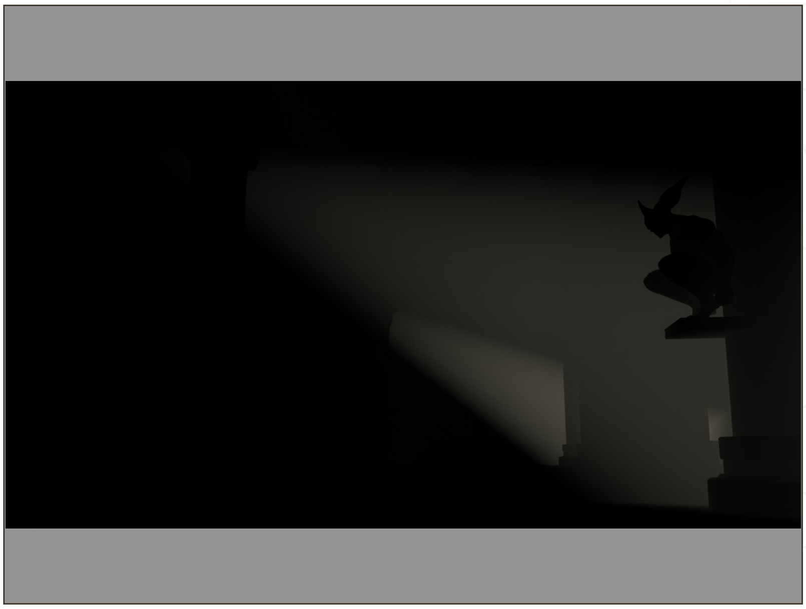
- Ambient Occlusion pass (**Fig.04**)

Fig.04



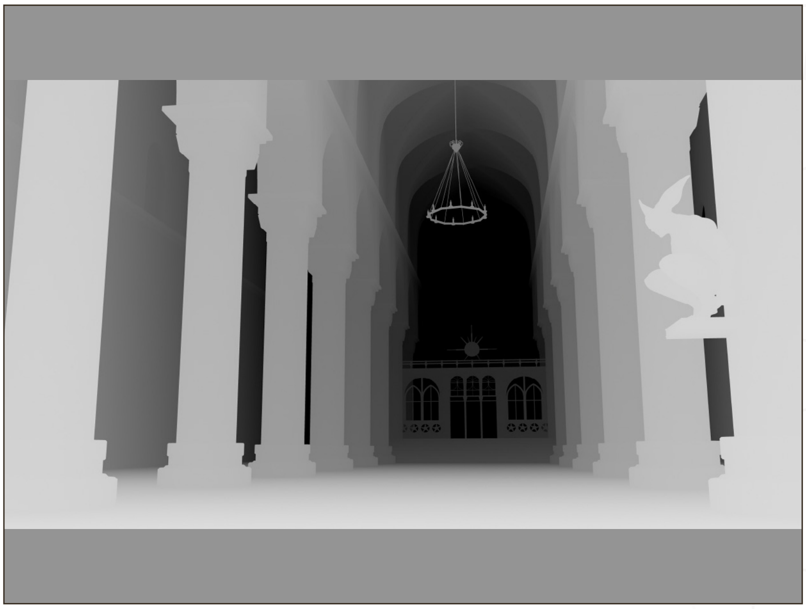
- Volumetric pass (**Fig.05**)

Fig.05



- ZDepth pass (**Fig.06**)

Fig.06



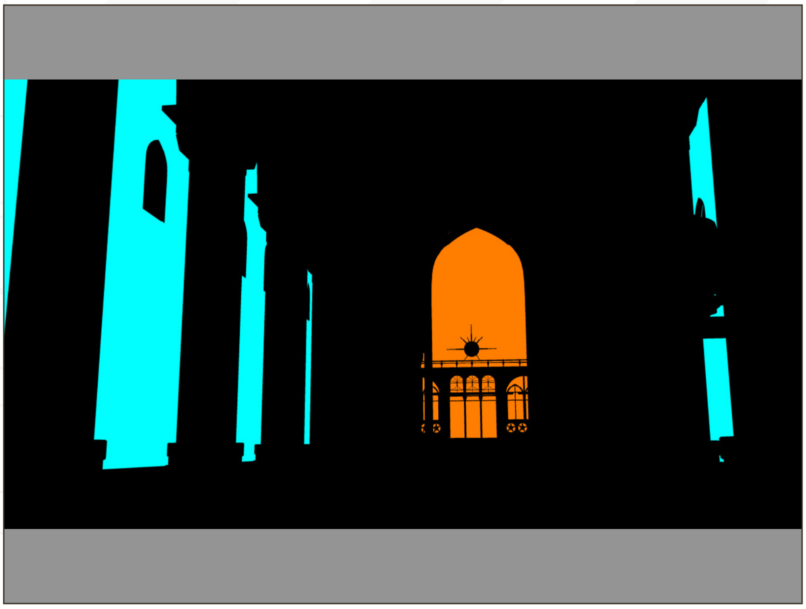
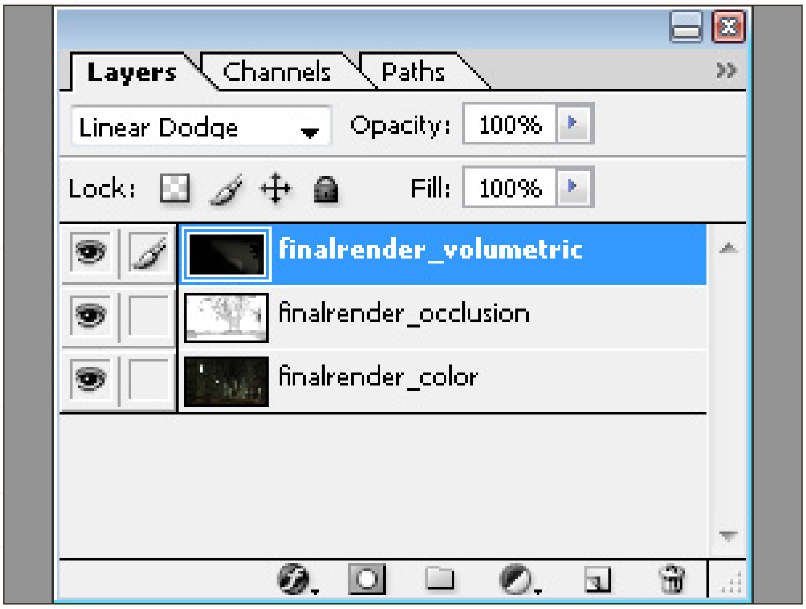


Fig.07

- Mask (for masking the window and the side walls) (**Fig.07**)



Layers | Channels | Paths

Linear Dodge | Opacity: 100%

Lock: | Fill: 100%

finalrender_volumetric
finalrender_occlusion
finalrender_color

Fig.08

STEP 1: PUTTING ALL THE PASS LAYERS TOGETHER IN A DOCUMENT

We put the passes together in this order and with these Layer Blending settings (to set the Blending Mode, choose an option from the scroll down menu on the Layers palette) (**Fig.08**):

- Colour (Normal blending)
- Ambient Occlusion (Multiply blending)
- Volumetric (Linear Dodge blending)

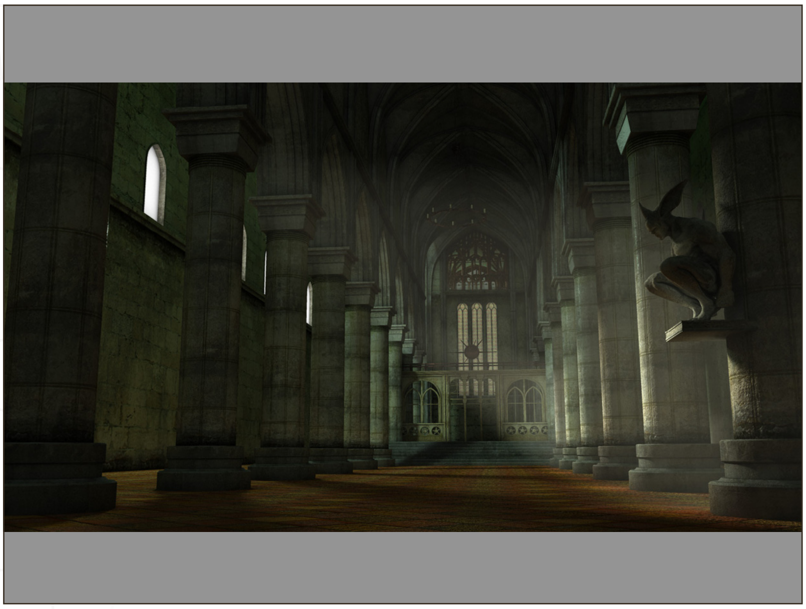


Fig.09

Here is the image with all of the passes combined, in the above order (**Fig.09**).

STEP 2: FINE-TUNING AND ADJUSTING COLOURS

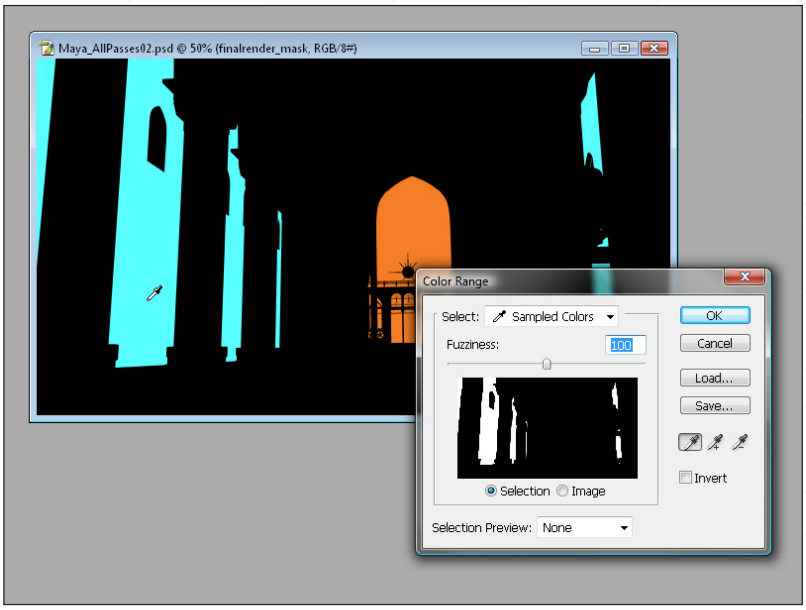
The walls behind the columns are easy to select using the Mask pass; using a Curves adjustment layer (click on the "Create a new fill or adjustment layer" icon in the Layers palette) makes them slightly darker, so that their tonal values differ from those of the columns, thus visually pushing the columns forward (usually, the lighter tones on a picture are perceived to be closer than the darker ones).

After putting the Mask pass above the other passes, select the colours marking the wall surface using the Colour Range tool. Open the Colour Range panel by clicking on Select > Colour Range and clicking on the desired colour either in the preview window or on the image. To make further adjustments to the selection, use the Fuzziness slider or the Sampled Colours, but since in this case there are only solid colour blots on the mask pass, this is not needed now. The darkness of the walls is now adjustable using the newly created selection as a mask for the Curves adjustment layer. **Fig.10** shows the selection of colours of the mask using the Colour Range tool, and **Fig.11** shows the adjustment of the tones of the walls using the Curves adjustment layer.

The farthest glass window is too dark compared to the concept art, so let's make it brighter. Select the window using the Mask pass and the same method we used for the walls. Apply Feather to the selection to make the edges smooth, so that the Curves adjustment layer created using this selection will act as it is a Glow pass (Select > Feather > Feather Radius: 25 pixels). Create a Curves adjustment layer from this selection, and make the bright values brighter, thus giving the glass windows a glow effect. **Fig.12** shows adding a glow effect to the farthest window using a Curves adjustment layer.

Because the stained glass windows at the end of the nave and the chapel are the central

Fig.10



Maya_AllPasses02.psd @ 50% (finalrender_mask, RGB/8#)

Select: Sampled Colors

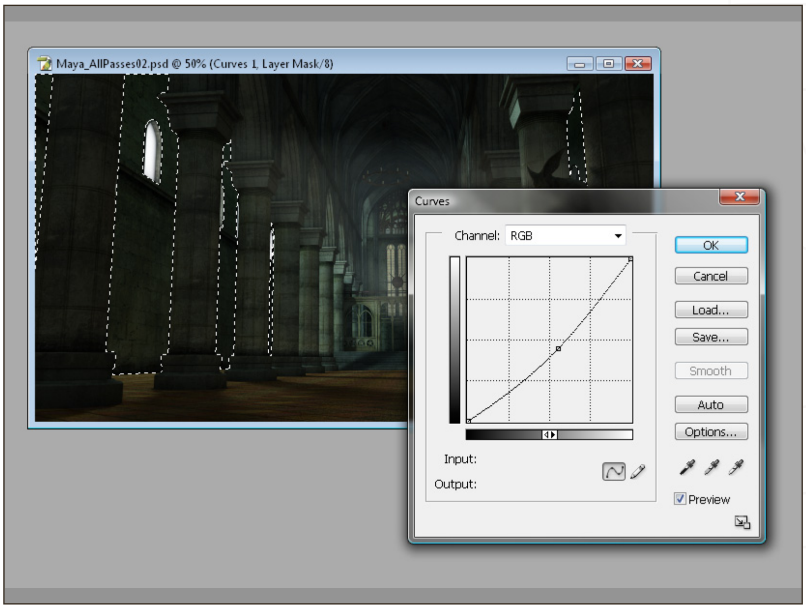
Fuzziness: 100

● Selection ○ Image

Selection Preview: None

☐ Invert

Fig.11



Maya_AllPasses02.psd @ 50% (Curves 1, Layer Mask/8)

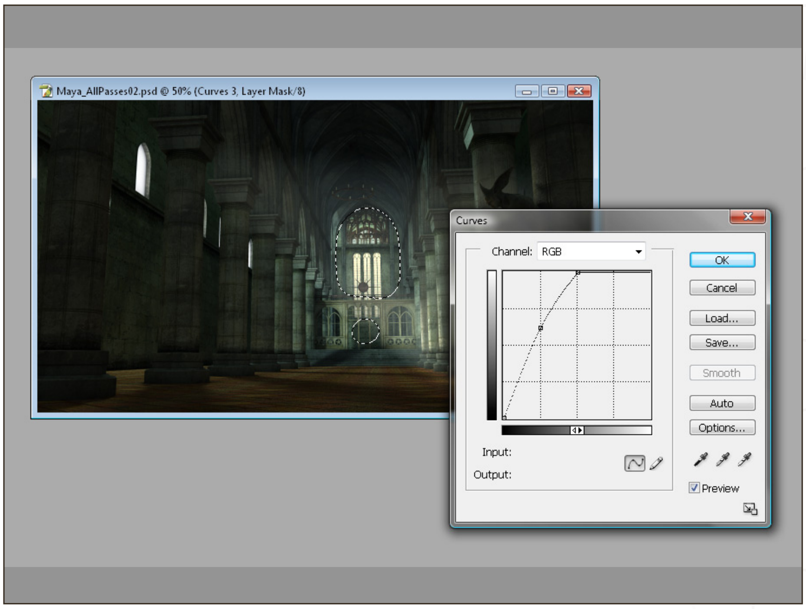
Channel: RGB

Input:

Output:

☑ Preview

Fig.12



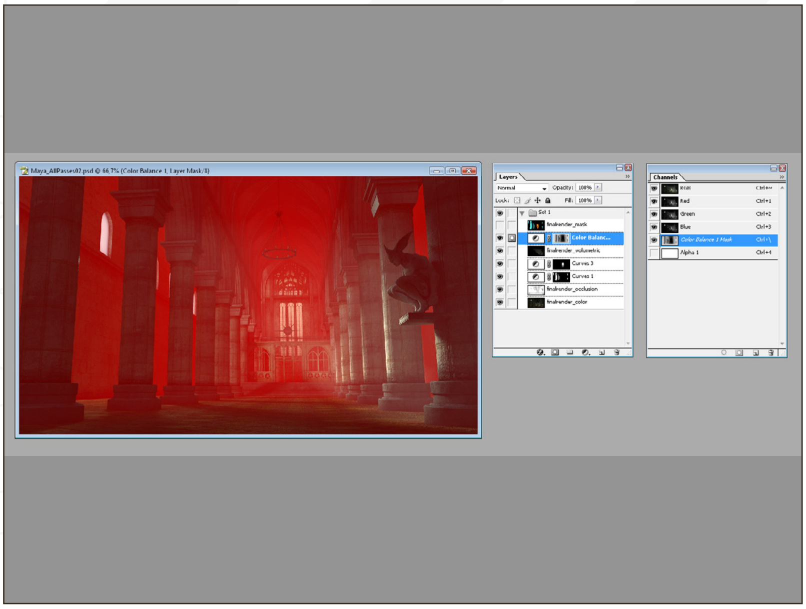
Maya_AllPasses02.psd @ 50% (Curves 3, Layer Mask/8)

Channel: RGB

Input:

Output:

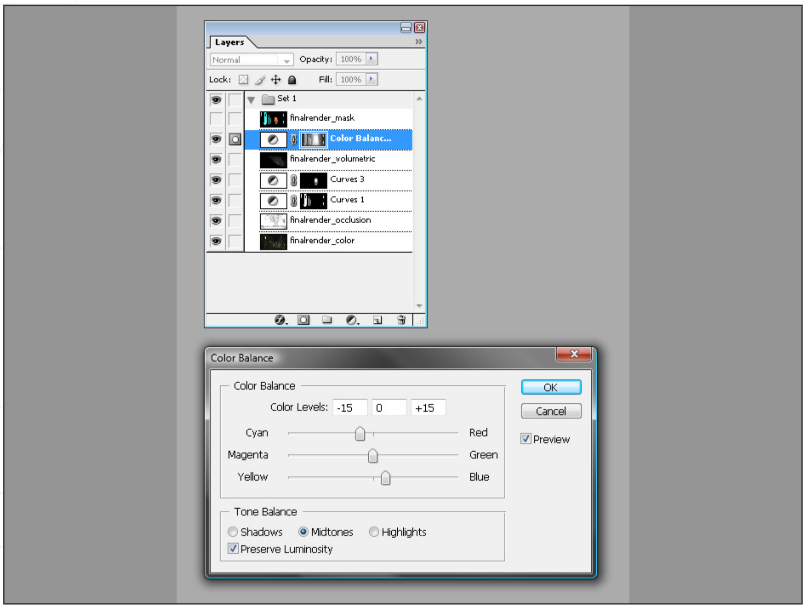
☑ Preview



Normal, Opacity: 100%, Fill: 100%

Fig.13a

elements of the composition, the feeling of depth can only be improved by filtering the farthest colours to a colder hue. Using Lens Blur would ruin the image, because if the focus is on the chapel then the gargoyle would become too blurry, and if the focus is on the gargoyle then the glass windows would be too blurry. We can now readjust the colour of the farther parts using the Colour Balance layer masked with the Depth pass. The feeling of depth can be increased this way, by applying colder colours to the parts farther from the camera.



Normal, Opacity: 100%, Fill: 100%

Color Balance
Color Levels: -15 0 +15
Tone Balance
○ Shadows ● Midtones ○ Highlights
☑ Preserve Luminosity
☑ Preview

Fig.13b

These tasks can be done using the Depth pass as a mask. First, create a new Colour Balance adjustment layer (on the Layers palette, go to the "Create a new fill or adjustment layer" icon), and then set the value of Midtones Colour Levels. Select and copy (Ctrl + A, Ctrl + C) the opened Depth pass. Select the Colour Balance adjustment layer, turn on the Colour Balance mask in the Channels palette, and paste the copied Depth pass (Ctrl + V). This way, the effect of the Colour Balance adjustment layer appears on the image masked out with the Depth pass. But now the Colour Balance adjustment layer affects the parts closer to the camera, so we simply invert the mask (Ctrl + I). The blue/green colour is the colour of the layer mask overlay, which appears when the visibility of the mask is turned on. The Colour Balance adjustment layer affects the image on these parts.

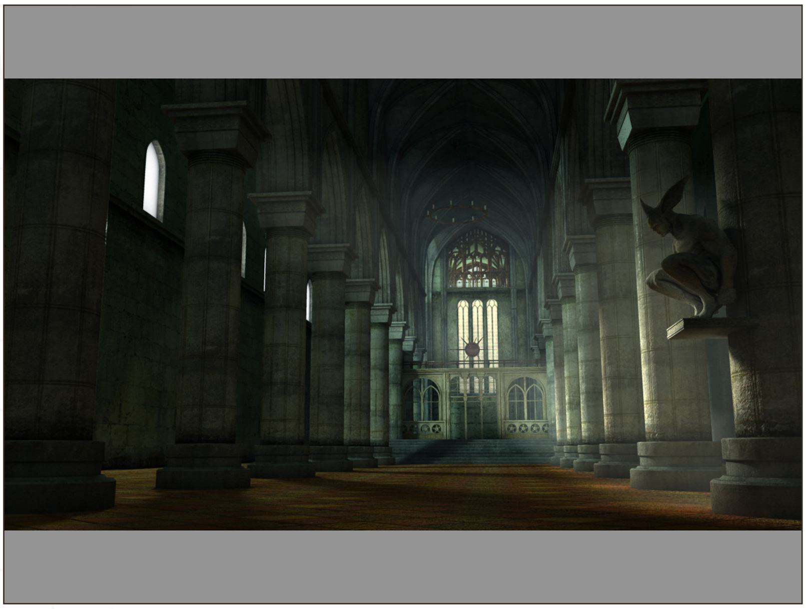


Fig.14

Fig.13a shows the inverted ZDepth map used as a mask for the Colour Balance adjustment layer. The red colour is the colour of the layer mask overlay, which appears when the visibility of the mask is turned on. The Colour Balance adjustment layer affects the image in these areas. **Fig.13b** shows the settings for the Colour Balance adjustment layer, and here we have our final image (**Fig.14**).

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GOTHIC CHURCH
INTERIOR CREATION
PART 5: FINAL CHAPTER – POST-PRODUCTION IN PHOTOSHOP

ZOLTAN KORCSOK
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Gothic Church
INTERIOR CREATION
PART 5: FINAL CHAPTER – POST-PRODUCTION IN PHOTOSHOP

Created In:

Photoshop

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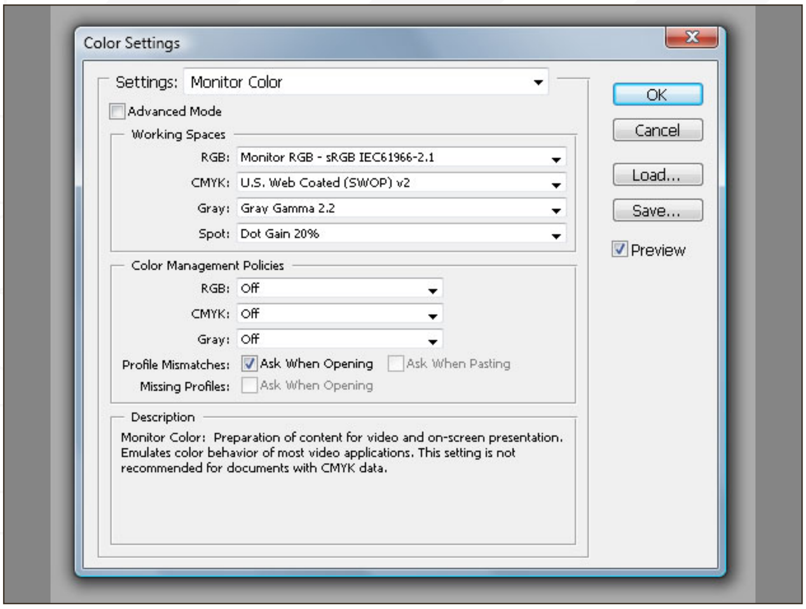


Color Settings

Settings: Monitor Color

☐ Advanced Mode

Working Spaces

RGB: Monitor RGB - sRGB IEC61966-2.1
CMYK: U.S. Web Coated (SWOP) v2
Gray: Gray Gamma 2.2
Spot: Dot Gain 20%

Color Management Policies

RGB: Off
CMYK: Off
Gray: Off
Profile Mismatches: ☑ Ask When Opening ☐ Ask When Pasting
Missing Profiles: ☐ Ask When Opening

Description

Monitor Color: Preparation of content for video and on-screen presentation. Emulates color behavior of most video applications. This setting is not recommended for documents with CMYK data.

Fig.01

Other colour space dependant settings can be found in Photoshop under the Edit/Colour Setting menu option (**Fig.01**). Usually the default setting is ideal for a standard monitor (Settings/Monitor Colour), but if the final image is created for a given technological display, e.g. European Standard CMYK offset printing, then it's recommended to select the most suitable option (e.g.: Settings/Europe Prepress Defaults) so that the visuals will be as similar to the final image as possible.

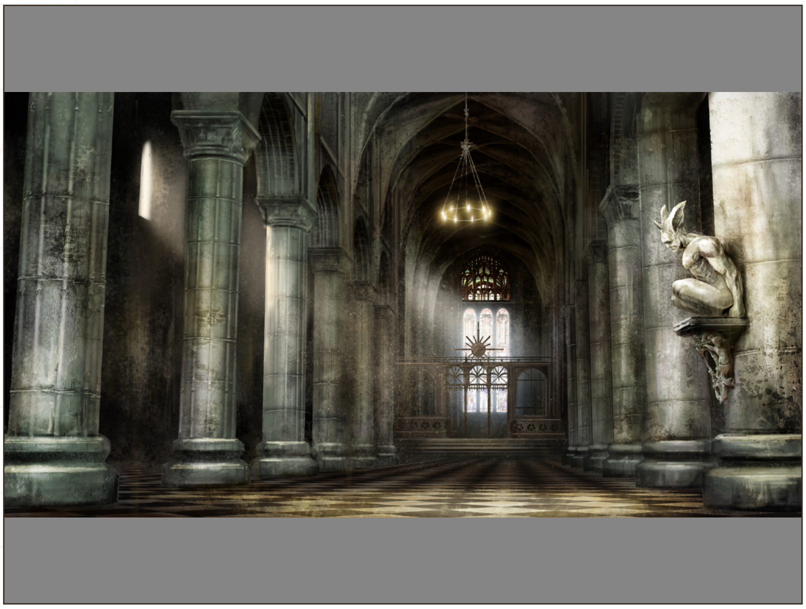


Fig.02

We will now try to put the given render passes from the modo artist together so that the finished image resembles the concept design as closely as possible (**Fig.02**).

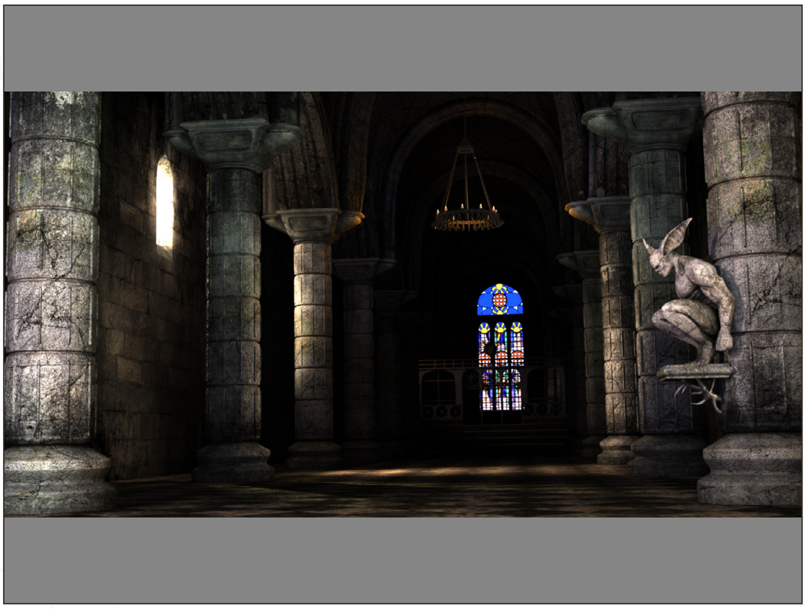


Fig.03

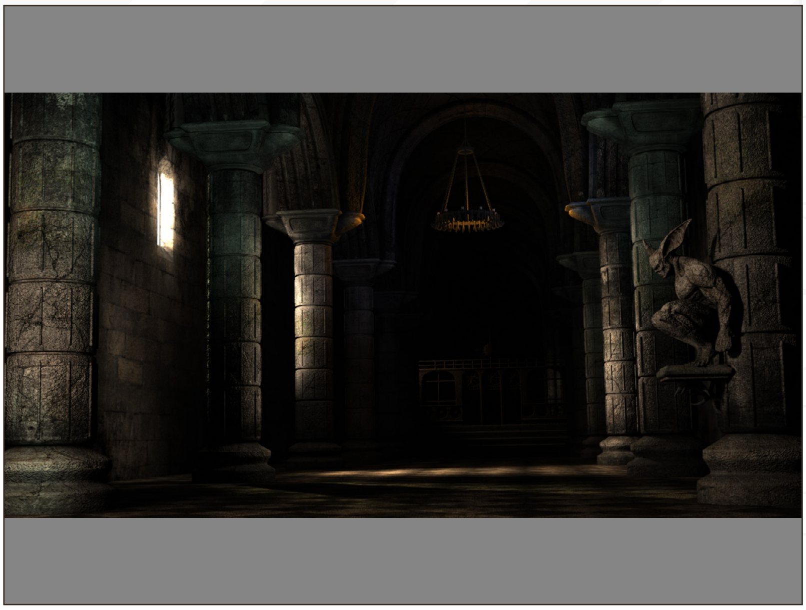
EXISTING PASSES

We have the following passes (in modo they're called outputs):

- Final Colour Output (**Fig.03**)

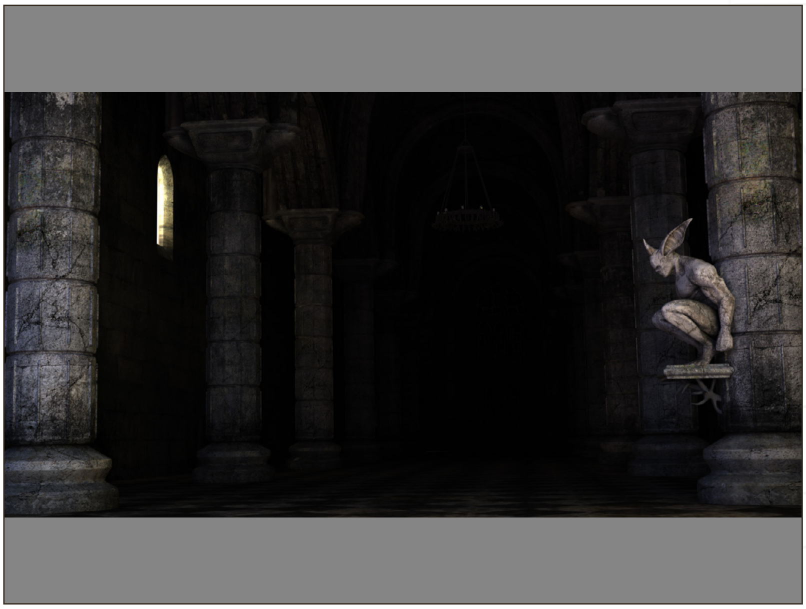
- Diffuse Shading (Direct) Output (**Fig.04**)

Fig.04



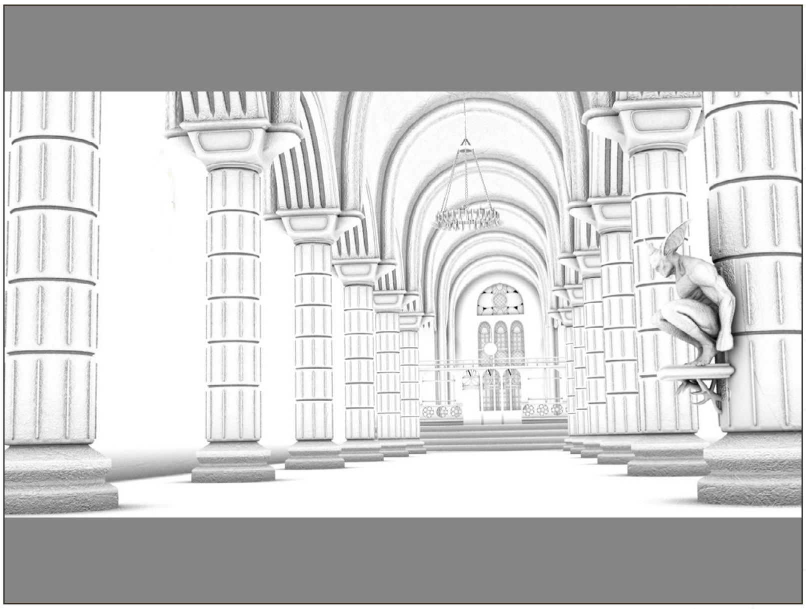
- Diffuse Shading (Indirect) Output (**Fig.05**)

Fig.05



- Ambient Occlusion Output (**Fig.06**)

Fig.06



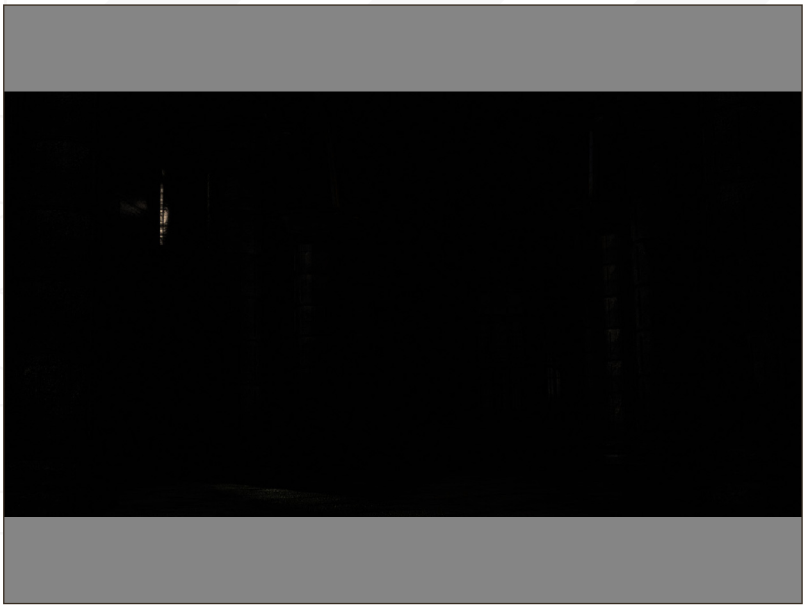


Fig.07

- Specular Shading Output (**Fig.07**)

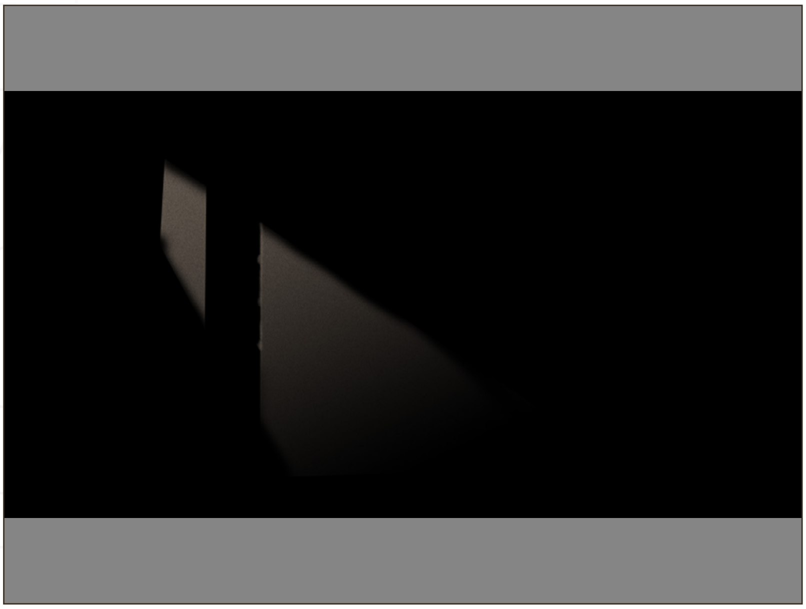


Fig.08

- Volumetric Light Output (**Fig.08**)

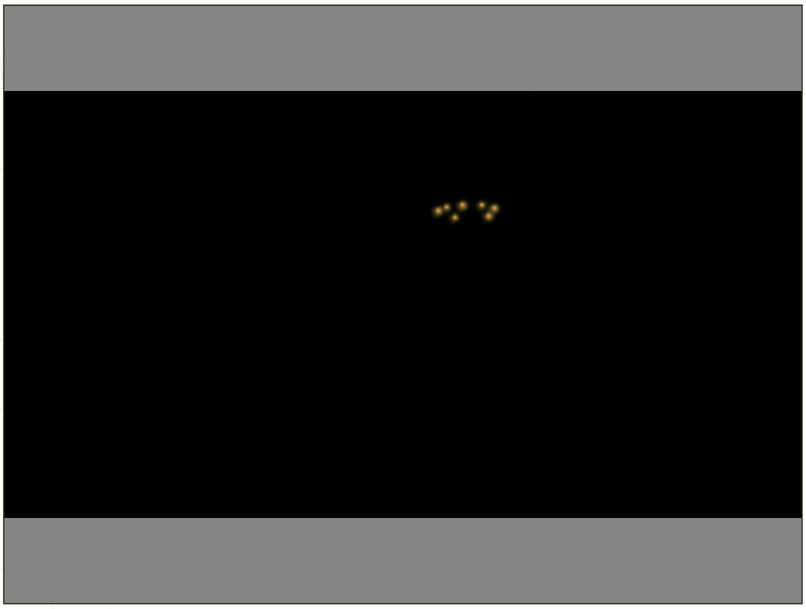
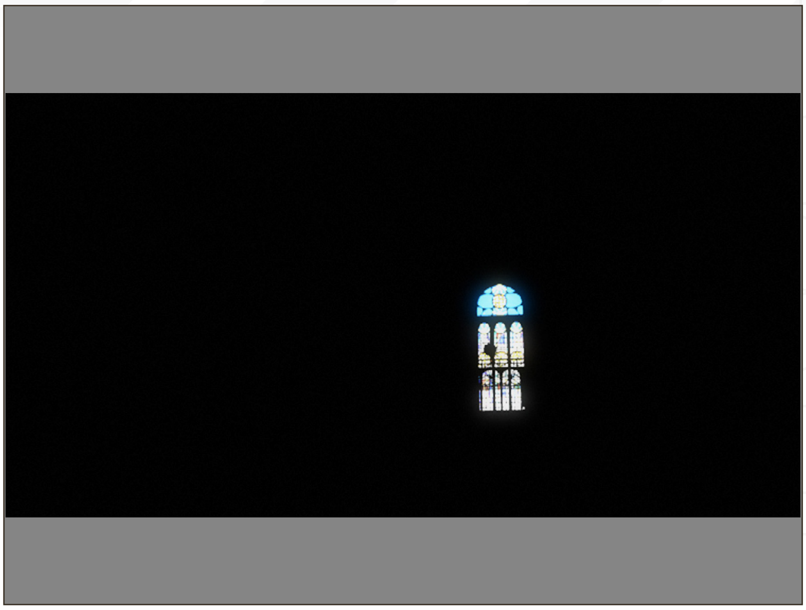


Fig.09

- Candle Glow Output (**Fig.09**)

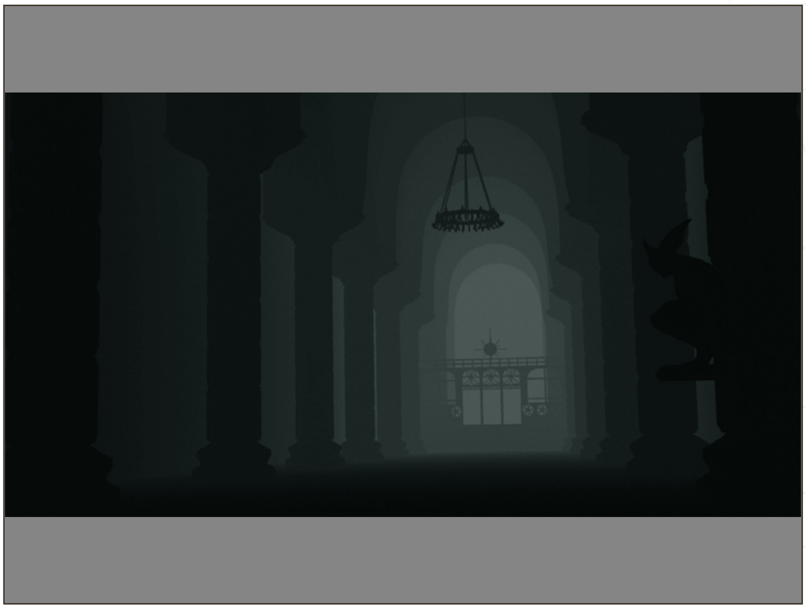
- Window Glow Output (**Fig.10**)

Fig.10



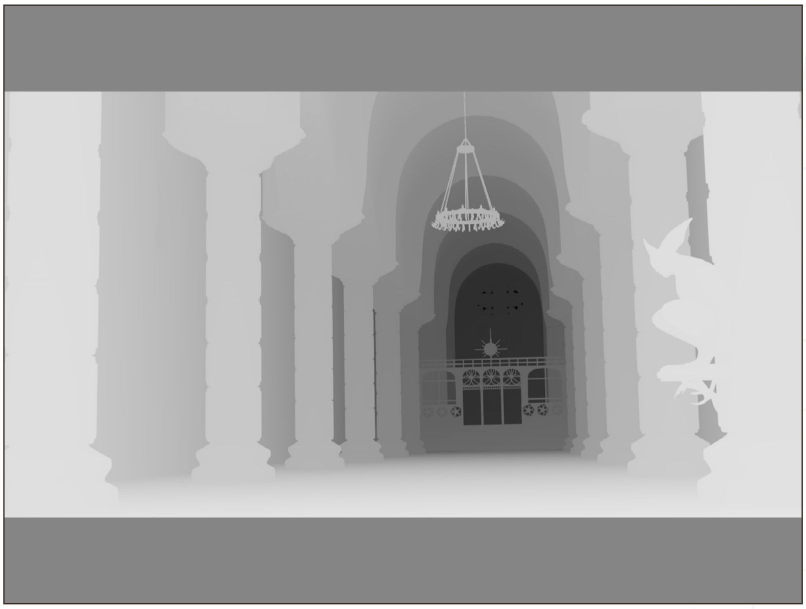
- Fog Output (**Fig.11**)

Fig.11



- Depth Output (**Fig.12**)

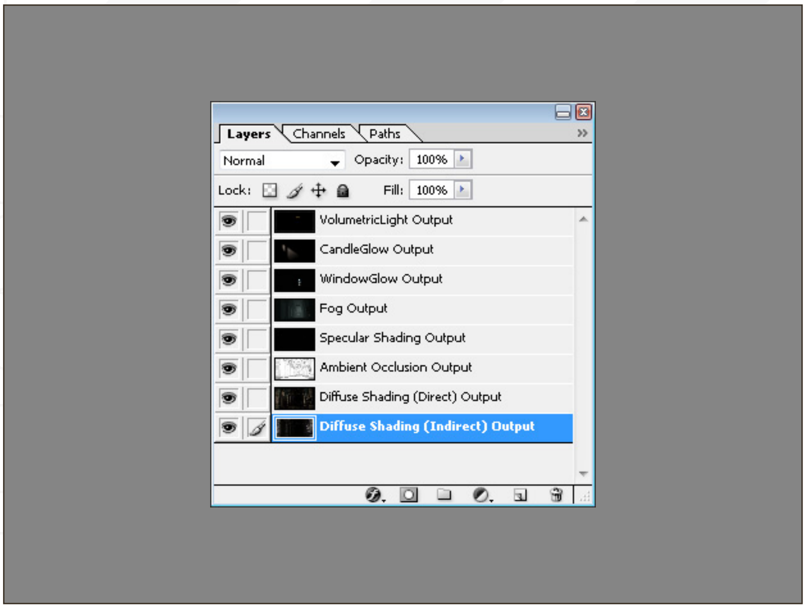
Fig.12



STEP 1: PUTTING ALL THE PASS LAYERS TOGETHER IN A DOCUMENT

The rendered passes can be saved into OpenEXR file format from modo. Using this format makes the handling of the different settings of the passes more flexible.

In this case the Diffuse Shading Colour is made up of two passes: Diffuse Shading (Direct) Output and Diffuse Shading (Indirect) Output. Put the other passes onto these, in this order and with these Layer Blending settings (to set the Blending Mode, choose an option from the scroll down menu on the Layers palette) (**Fig.13**):



Normal
Opacity: 100%
Fill: 100%

Fig.13

- Diffuse Shading (Direct) output (Normal blending)
- Diffuse Shading (Indirect) output (Screen blending)
- Ambient Occlusion Output (Multiply blending)
- Specular Shading Output (Linear Dodge blending)
- Fog Output (Screen blending)
- Window Glow Output (Screen blending)
- Candle Glow Output (Linear Dodge blending)
- Volumetric Light Output (Linear Dodge blending)

Here is the image with all passes combined in one document, in the above order (**Fig.14**).

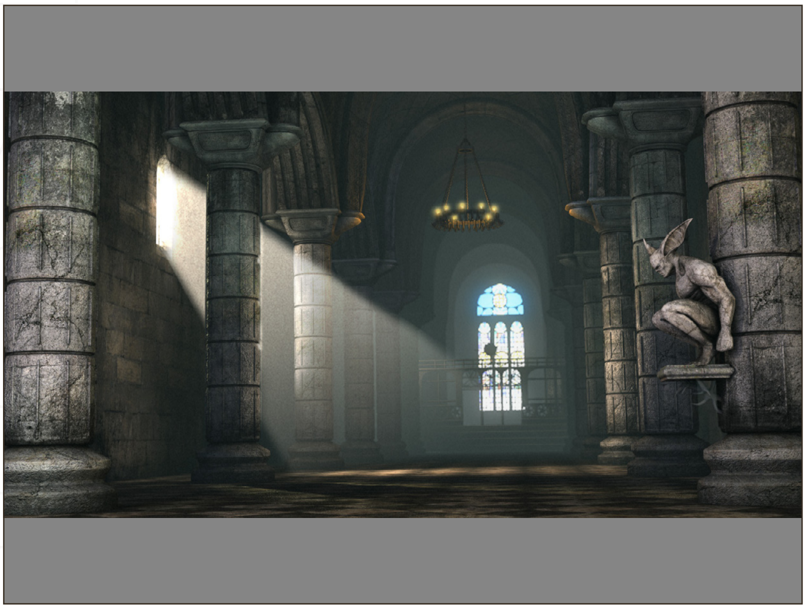


Fig.14

Working with OpenEXR images in Photoshop

OpenEXR is a high dynamic range (HDR) image file format developed by Industrial Light & Magic. The OpenEXR format has higher dynamic range and colour precision than existing 8- and 10-bit image file formats, which makes it possible to change the exposure of a previously rendered pass. Adobe Photoshop CS4 can handle this format, but if you have an older version, a free plugin is available for download here: **http://www.openexr.com/**

OpenEXR in Adobe Photoshop CS4 (with Basic Workspace):

The exposure option is available on the Adjustments palette (the Exposure icon or Exposure Presets), in the Layers menu (Layer > New Adjustment Layer > Exposure) or in the Image menu (Image > Adjustments > Exposure). **Fig.15** shows the OpenEXR

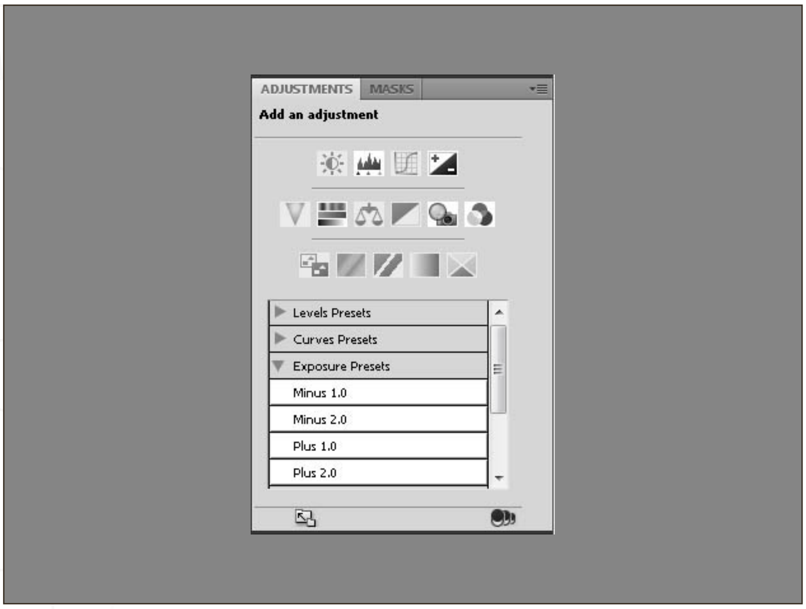


Fig.15

adjustment panel in Adobe Photoshop CS4 (with Basic Workspace).

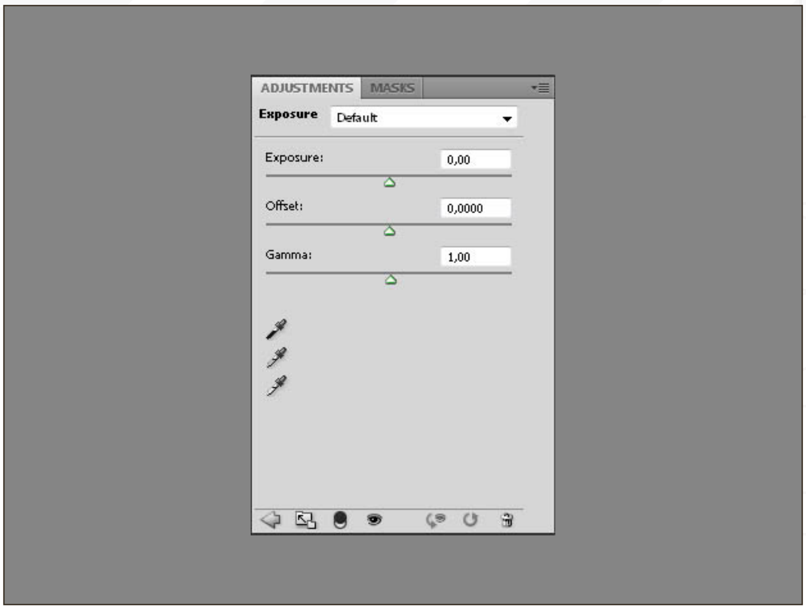
When selecting Exposure Presets, the following options appear on the Adjustments panel (**Fig.16**):

- **Exposure:** The bright parts of the tonal scale of the image are adjustable, while largely preserving the darker tones. An exposure of 1 will make the image twice as bright, revealing more detail in the low end. An exposure of -1 will make the image twice as dark
- **Offset:** The shadows and midtones can be darkened, while largely preserving the lighter tones
- **Gamma:** controls the gamma value of the image
- **The black point sampler (eyedropper):** The darkest value can be defined on the picture – that is which tonal value should be the darkest
- **The grey point (midtone) sampler:** The midtone value can be defined
- **The white point sampler:** The brightest value can be defined

The EXR import plugin (in older versions of Adobe Photoshop):
When opening the image, the Exposure and the Gamma values are adjustable, and Un-Premultiply can be switched on and off – this option has a meaning only if the image has an alpha channel. OpenEXR images are "premultiplied"; the values of the colour channels are already matted against black using the alpha channel. It is worth using this option with an image which has an alpha channel, because the plugin will apply it before the exposure and the gamma correction. **Fig.17** shows the EXR Import Settings dialogue. The dialogue contains a preview area which shows the effect your setting will have on the image.

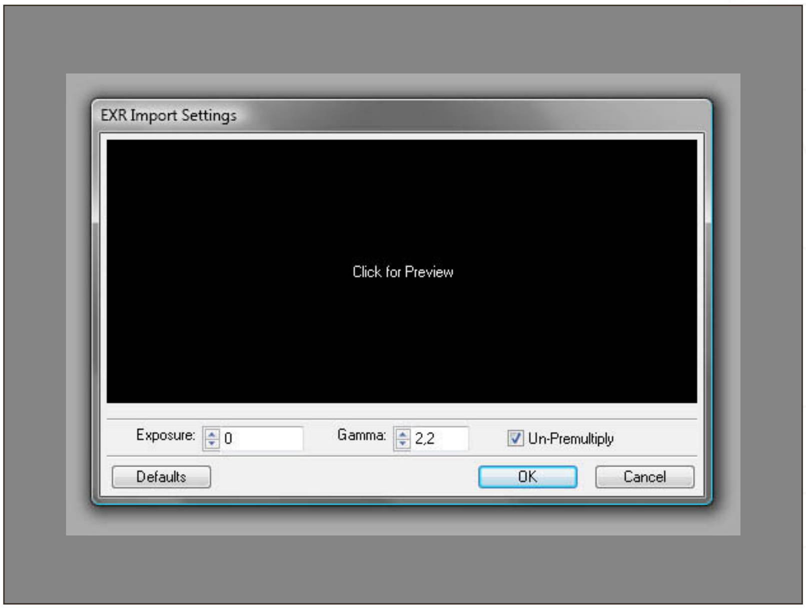
Fig.18 shows the default settings (Default Gamma is 2.2, because the standard video gamma setting of most screens is 2.2). If the

Fig.16



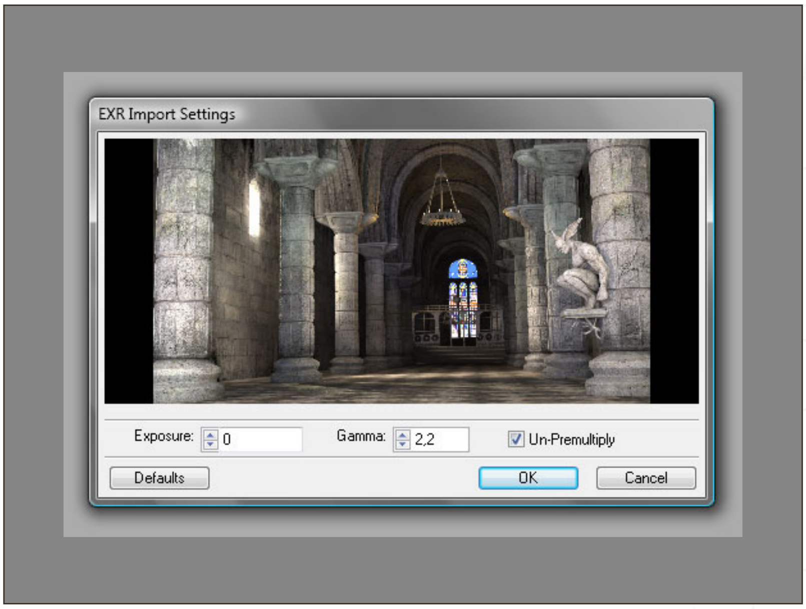
Exposure: Default
Exposure: 0,00
Offset: 0,0000
Gamma: 1,00

Fig.17

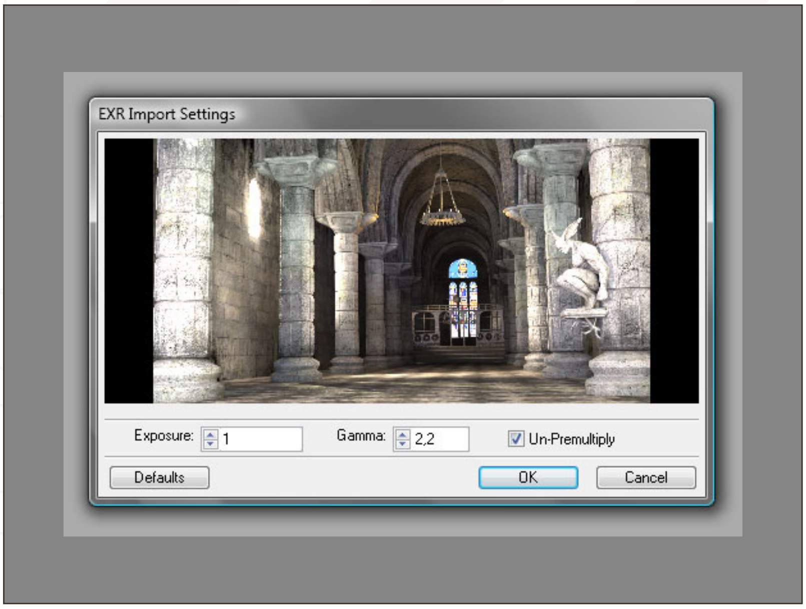


Exposure: 0
Gamma: 2,2
☑ Un-Premultiply

Fig.18



Exposure: 0
Gamma: 2,2
☑ Un-Premultiply

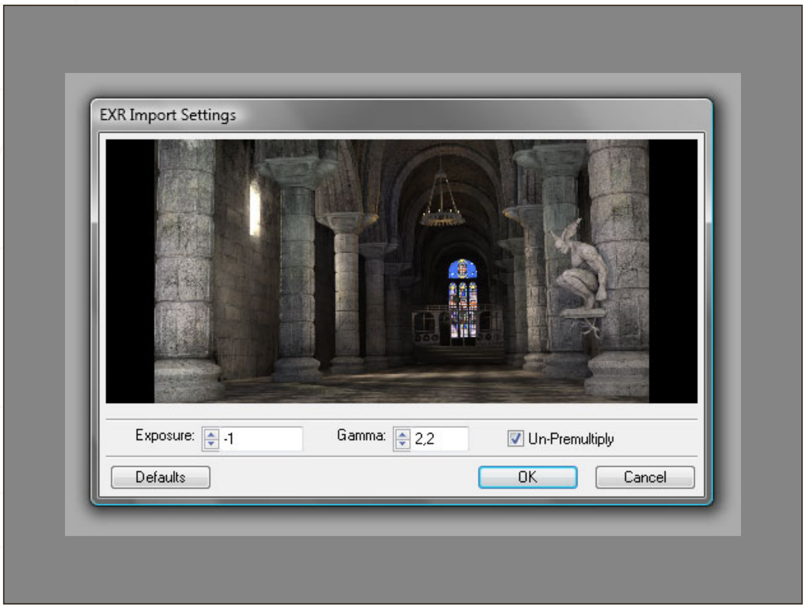


Exposure: 1 Gamma: 2,2 ☑ Un-Premultiply

Fig.19

dark values are too dark, the exposure of the pass can be set to be brighter, or if the bright values are too bright, the exposure can be set to darker.

Fig.19 shows the exposure adjustment to a positive value, and **Fig.20** shows the exposure adjustment to a negative value.



Exposure: -1 Gamma: 2,2 ☑ Un-Premultiply

Fig.20

STEP 2: FINE-TUNING

The light sifting in from the side is too strong; it overwhelms the effect of the window in the back, thus disrupting the composition, so we need to turn down the opacity of the Volumetric Light to 43%. Because the Ambient Occlusion makes the pattern and the joints of the columns too dark, turn its opacity down to 60%. We also turn the opacity of the Fog down to 60% as well, because it concurs with the glow effect of the window. Here you can see the fine-tuned image (**Fig.21**).

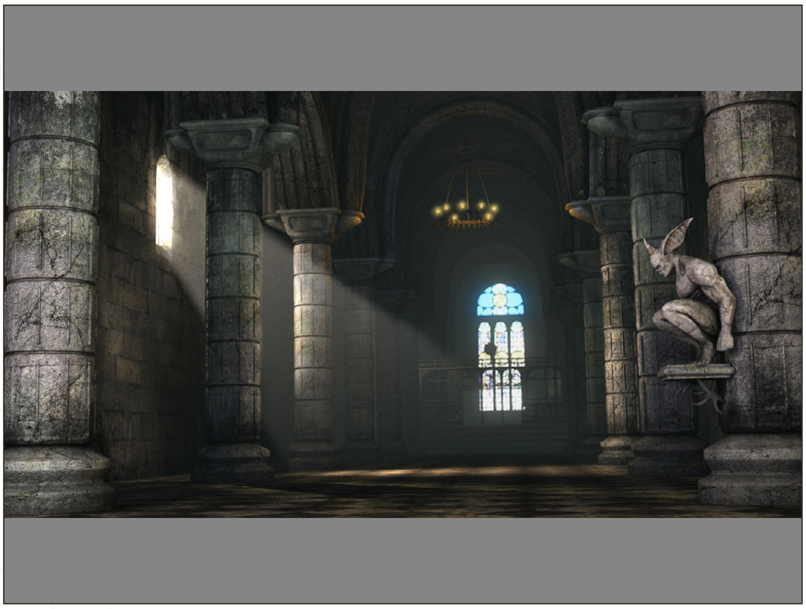


Fig.21

STEP 3: ADJUSTING COLOUR

Using the Colour Balance layer masked with the Depth pass, we can now readjust the colour of the farther parts to a colder hue. The feeling of depth can be increased this way, by applying colder colours to the parts farther from the camera.

These tasks can be done using the Depth pass as a mask. First, create a new Colour Balance adjustment layer (in the Layers palette, go to the "Create a new fill or adjustment layer" icon), and then set the value of Midtones Colour Levels. Select and copy (Ctrl + A, Ctrl + C) the opened Depth pass. Select the Colour Balance adjustment layer, turn on the Colour Balance mask on the Channels palette, and paste the copied Depth pass (Ctrl + V). This way, the effect of the Colour Balance adjustment layer appears on the image masked out with the Depth pass. But now the Colour Balance adjustment layer affects the parts closer to the camera, so we simply invert the mask (Ctrl + I). The red colour is the colour of the layer mask overlay, which appears when the visibility of the mask is turned on. The Colour Balance adjustment layer affects the image on these parts.

Fig.22a shows the inverted ZDepth map used as a mask for the Colour Balance adjustment layer. The red colour is the colour of the layer mask overlay, which appears when the visibility of the mask is turned on. The Colour Balance adjustment layer affects the image in these areas. **Fig.22b** shows the settings for the Colour Balance adjustment layer, and here is the final image (**Fig.23**).

Fig.22a

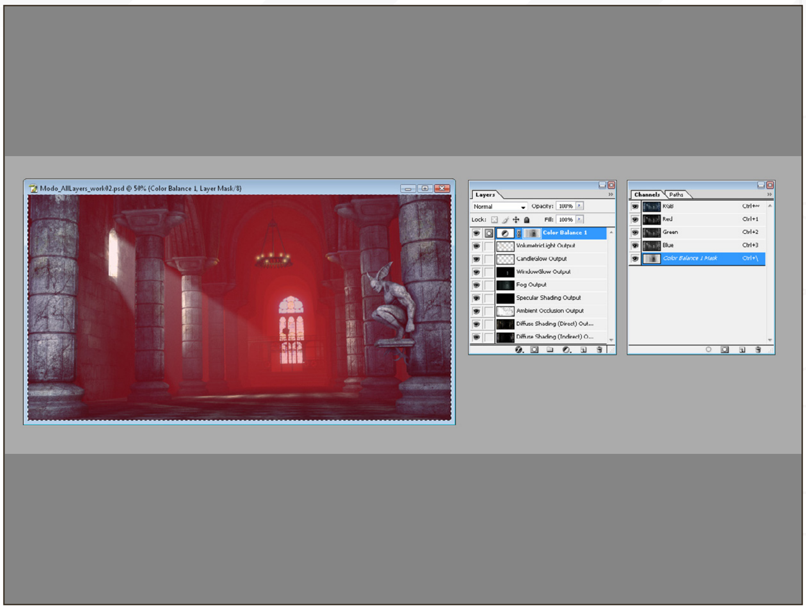
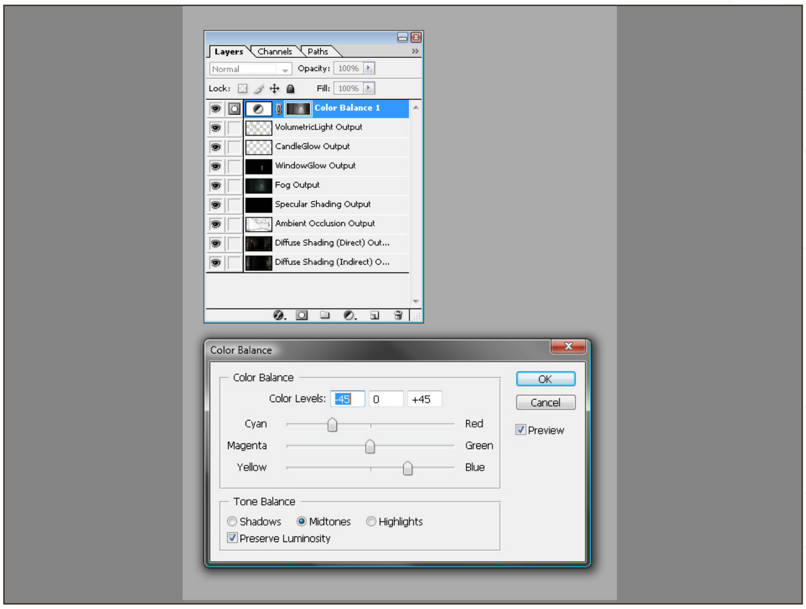


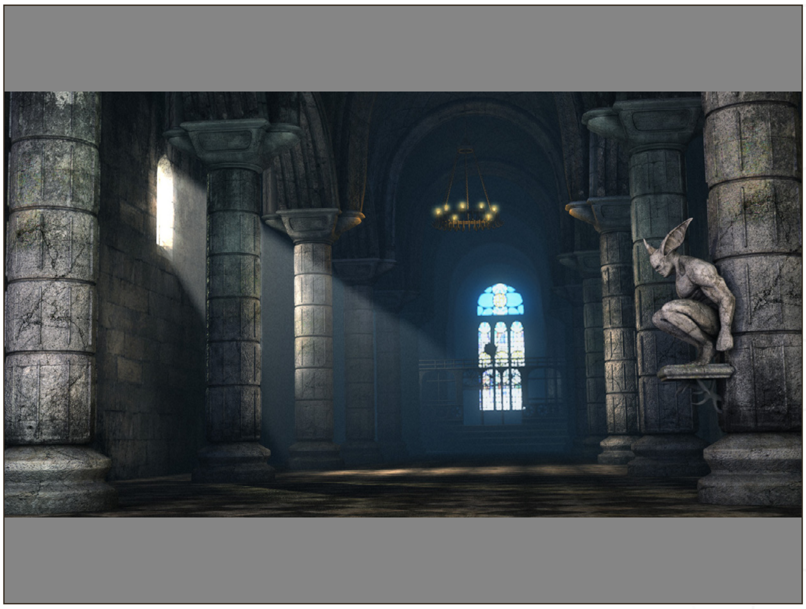
Fig.22b



Layers: Normal, Opacity: 100%, Fill: 100%
- Color Balance 1
- VolumetricLight Output
- CandleGlow Output
- WindowGlow Output
- Fog Output
- Specular Shading Output
- Ambient Occlusion Output
- Diffuse Shading (Direct) Out...
- Diffuse Shading (Indirect) O...

Color Balance
Color Levels: -45 0 +45
Cyan – Red
Magenta – Green
Yellow – Blue
Tone Balance
○ Shadows ● Midtones ○ Highlights
☑ Preserve Luminosity
☑ Preview

Fig.23



TIPS FOR HANDLING LAYERS

- The mask of a masked layer can be easily switched on and off. Just left-click on the mask while holding down the Shift key

- Putting the layers into sets makes them easy to duplicate, so you can always leave a “backup copy” of the arranged layers in the file. This can be useful if you merge a copied set for using lens effects

- A layer or layer set can be easily duplicated by grabbing it on the Layers palette and dragging it down onto the “Create new layer” icon on the bottom of the palette

- A new layer set can be created by clicking the “Create new set” icon, which can be found on the bottom of the palette. You can then simply drag the layers into it. Another option is linking the layers belonging to one set with the currently selected layer to it, and then selecting Layer Set from Linked on the Layer palette

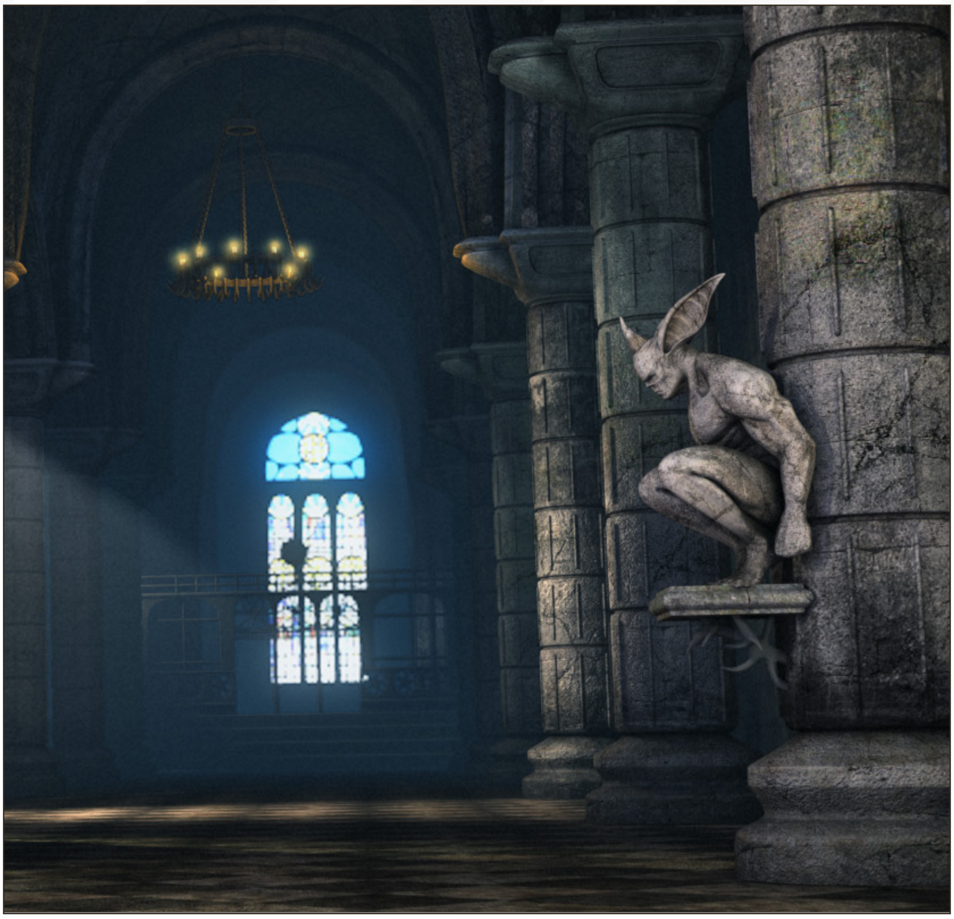
CONCLUSION

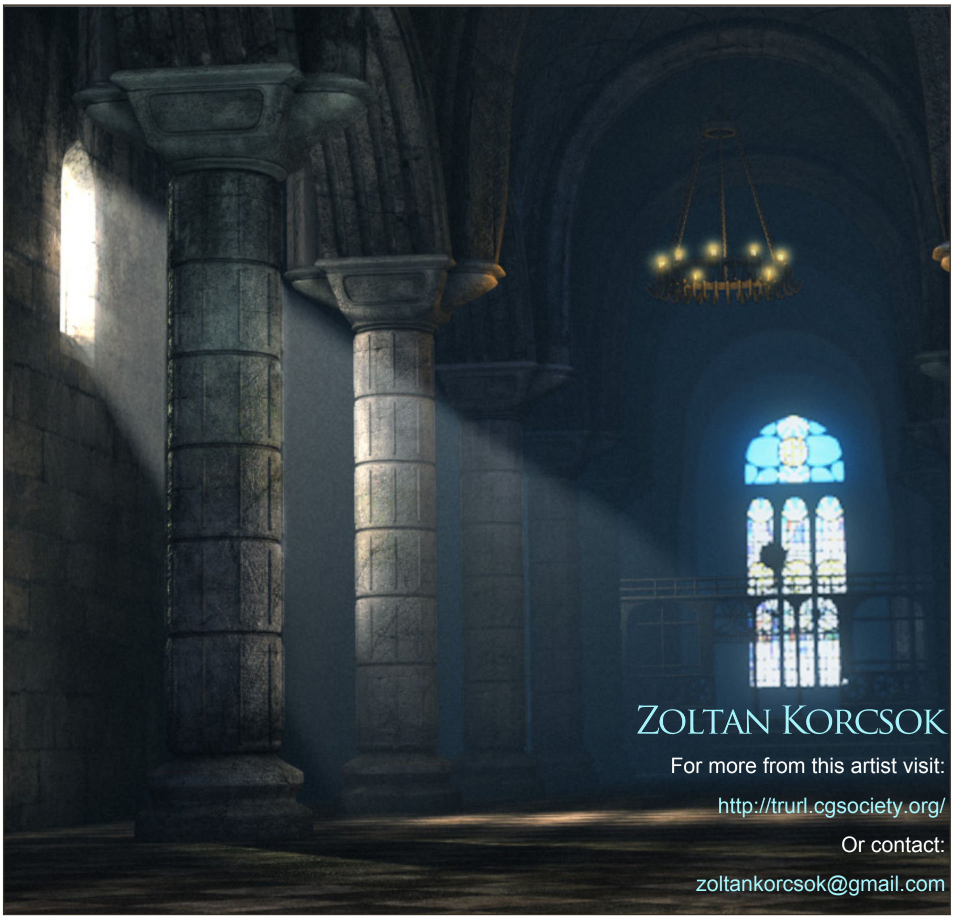
The examples show clearly that effects in a scene rendered in multiple passes can be adjusted more easily and finely than in the rendering software itself. The more passes available, the more finely the certain effects can be adjusted; however, it’s enough to use only those passes which are sufficient for fine-tuning the effects in the scene.

Originally designed & modelled by:

RICHARD TILBURY

GOTHIC CHURCH
INTERIOR CREATION
PART 5: FINAL CHAPTER – POST-PRODUCTION IN PHOTOSHOP





ZOLTAN KORCSOK

For more from this artist visit:

http://trurl.cgsociety.org/

Or contact:

zoltankorcsok@gmail.com